

MIL-M-15071G (NAVY)

**FUNCTIONAL
DESCRIPTION****NAVSHIPS XXXX-XXX-XXXX
VOLUME 1****CHAPTER 3**

2-1. **FORK ASSEMBLY.** (Figure 2-1). The 48-inch long side reach forks are connected to the fork carriage. The fork carriage moves up and down by roller chains driven by a hydraulic cylinder and piston. The fork carriage is roller-mounted to the inner mast assembly. Rollers mounted on inner mast move in channels which make up the outer mast assembly. As the fork carriage moves up, the top of the hydraulic piston assembly comes in contact with the inner mast. If the hydraulic piston moves up more, it lifts the inner mast along with the fork carriage. Forks can be raised from deck level to 60 inches above the deck by moving the fork carriage.

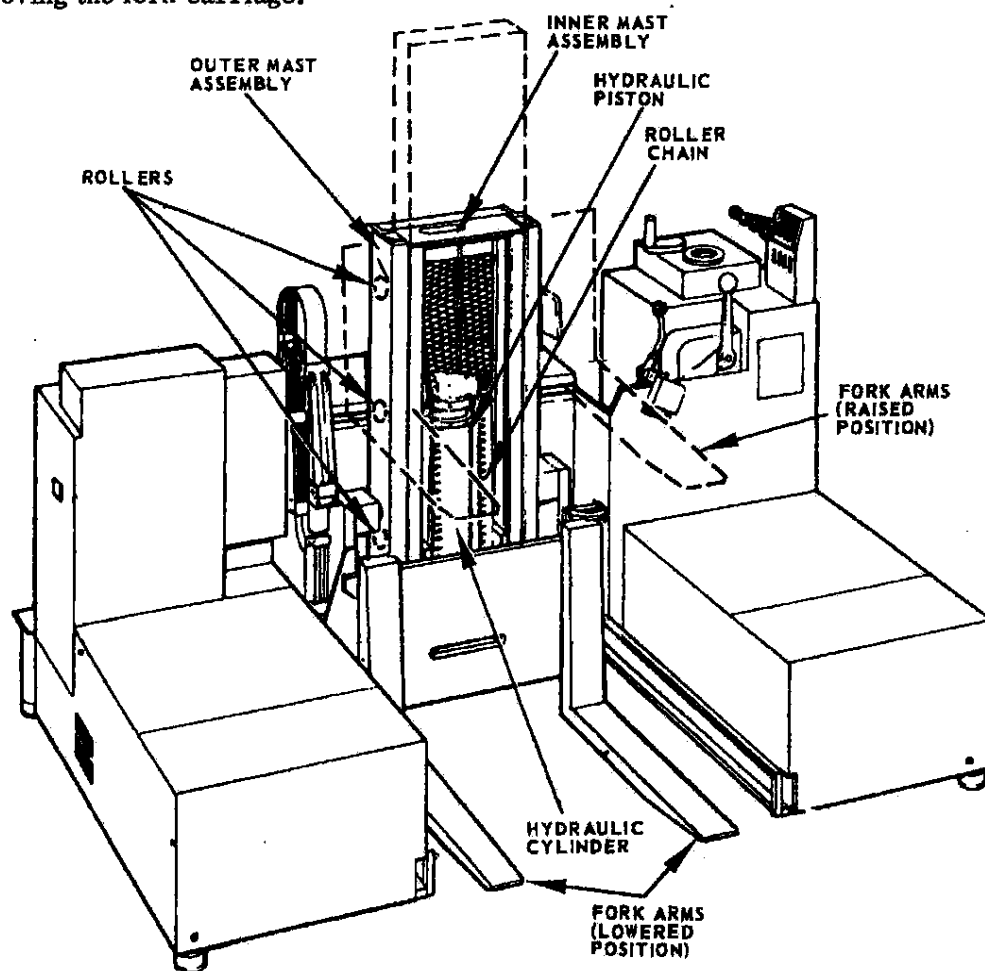


Figure 2-1. 4-D Fork Truck Fork Assembly

Figure 7. Major Parts of Component or Equipment.

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MIL-M-15071G (NAVY)

**FUNCTIONAL
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2-5. INTERACTION OF PARTS. (Figure 2-5). The steering mechanisms for the 4-D fork truck is used for direction changes and normal turns when the truck is in motion. The mechanisms provide steering control, an electronic system, and four steering motors connected to the wheel assemblies by chain drives. Moving the steering control causes the electronic system to guide each steering motor to move. As all four wheels are used to steer the truck, the wheels do not all turn in the same direction. The electronic steering system guides each wheel to move in the right amount and direction for the turn. The steering motors are also used to swing the wheels for 90-degree changes in direction when the 4-D fork truck is lifted on the jacks for a 90-degree turn.

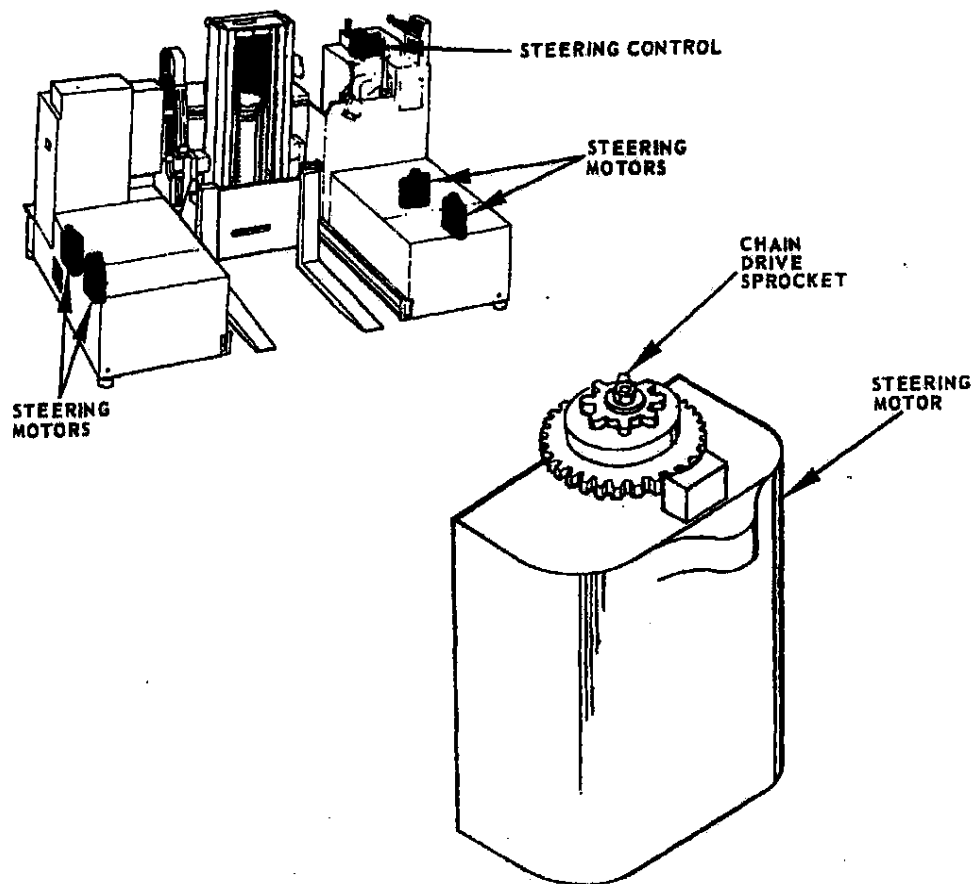


Figure 2-5. 4-D Fork Truck Steering Motor

Figure 8. Interaction of Major Parts.

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MIL-M-15071G(NAVY)

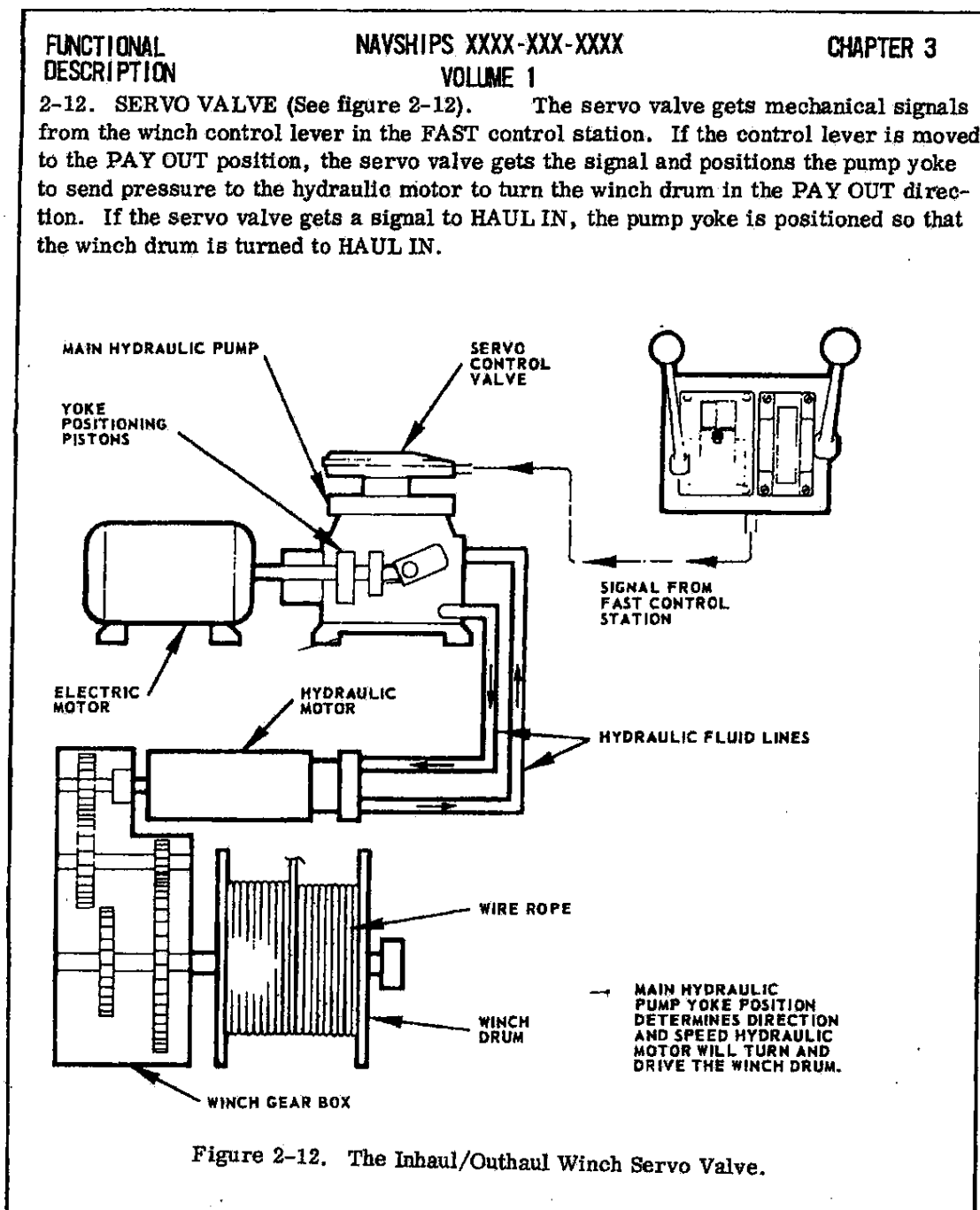


Figure 9. Functional Description Diagram.

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MIL-M-15071G(NAVY)

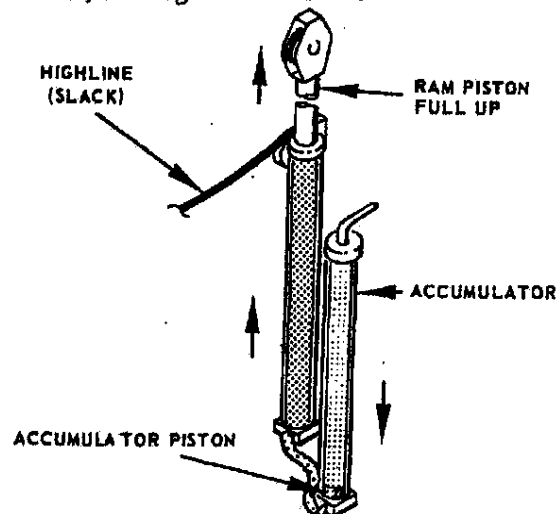
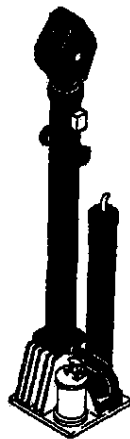
**FUNCTIONAL
DESCRIPTION**

NAVSHIPS XXXX-XXX-XXXX

CHAPTER 3

VOLUME 1

2-10. HOW THE RAM TENSIONER WORKS (See figure 2-10). When the ram tensioner piston has traveled to the top, the accumulator piston is at the bottom of the accumulator cylinder. When this occurs, the highline is slack.



As the highline is tightened by the highline winch, the piston is forced down, forcing fluid out of the ram cylinder into the accumulator. The return of the hydraulic fluid causes the piston in the accumulator to rise, forcing the air back into the air supply source.

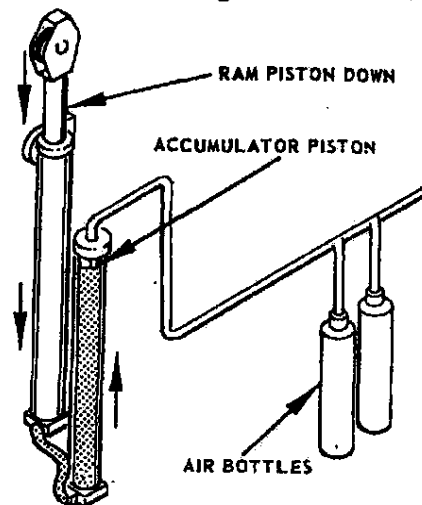
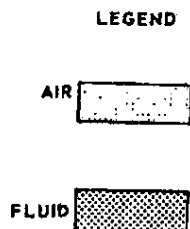


Figure 2-10. How the Ram Tensioner Works.

Figure 10. Equipment Inner Operation.

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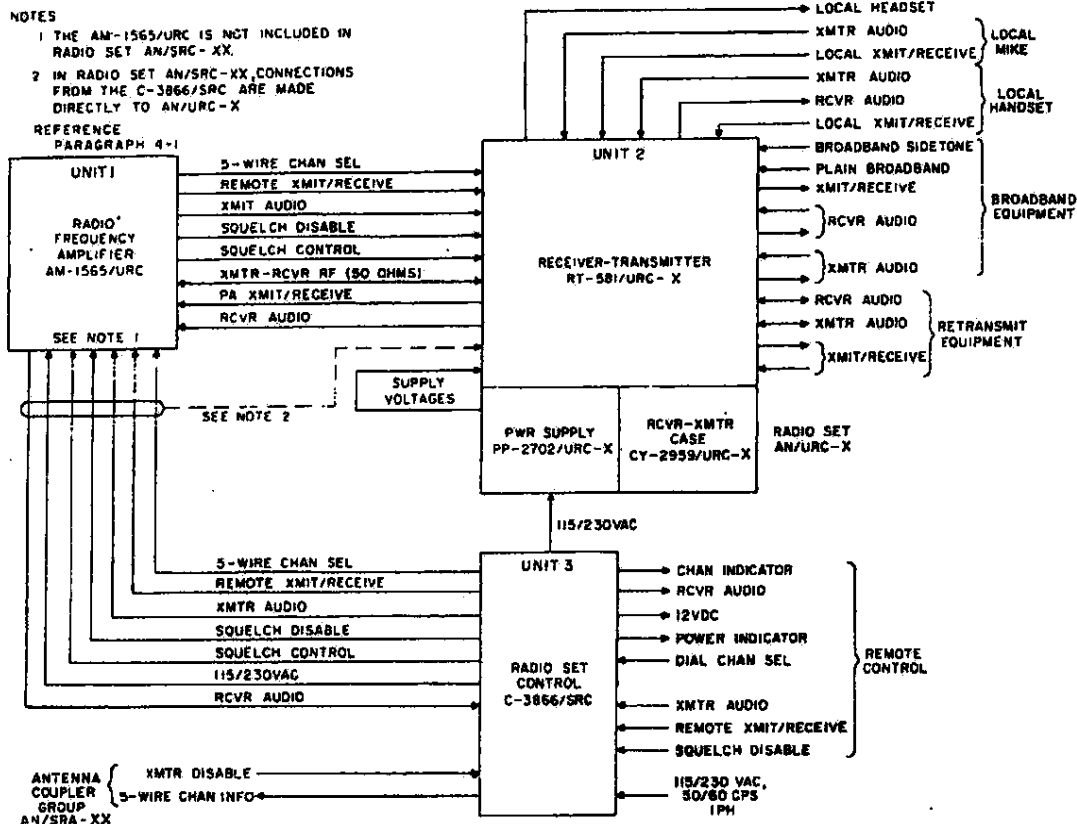


Figure 11. Overall Functional Block Diagram.

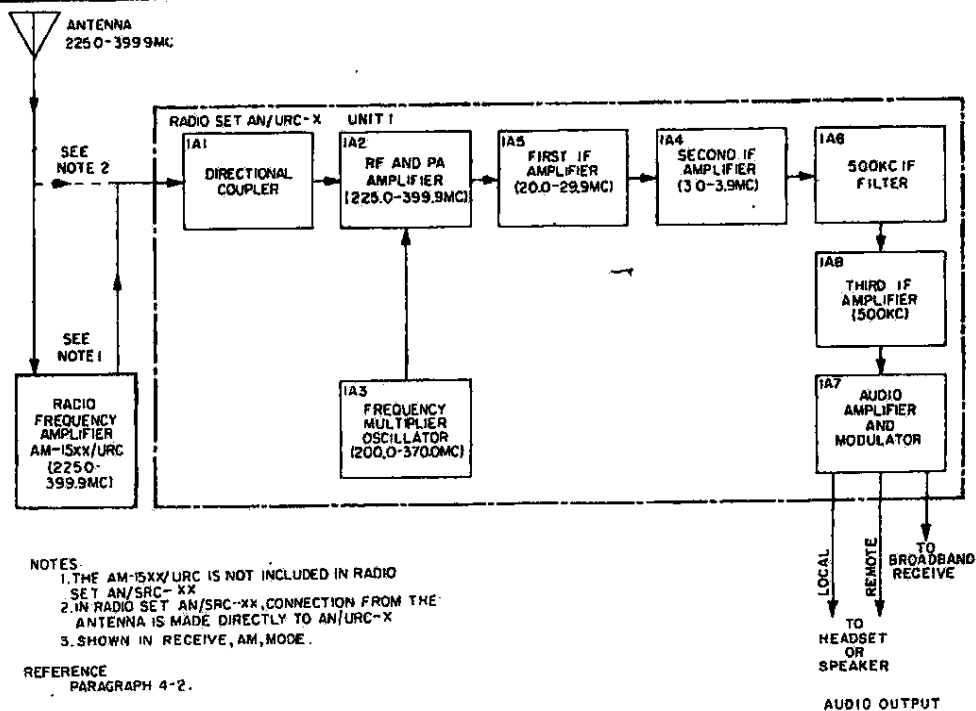
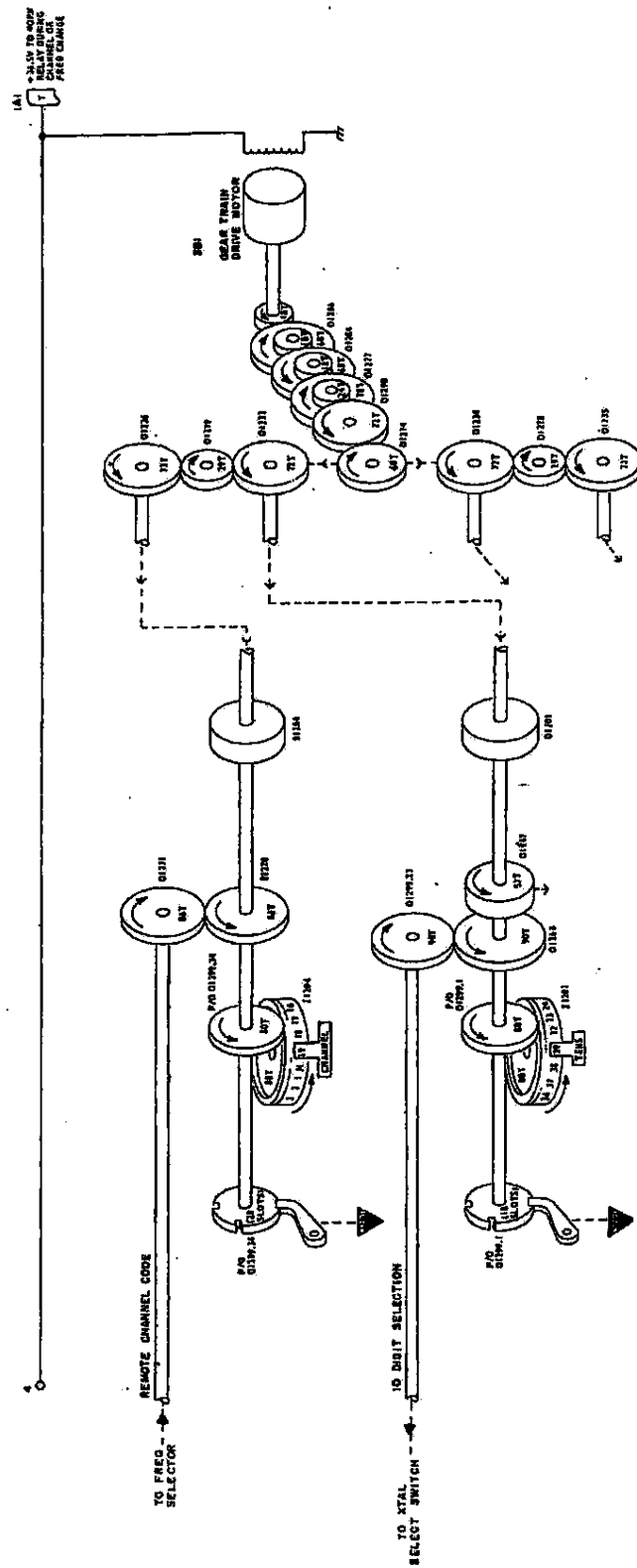


Figure 12. Functional Block Diagram.

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MIL-M-15071G (NAVY)



Note: Sample arrangement only. Size and legibility do not conform to minimum specification requirements.

Figure 13. Mechanical Schematic Diagram.

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MIL-M-15071G(NAVY)

TABLE ZZ. TROUBLESHOOTING INDEX RADIO SETS
AN/SRC-XX AND AN/SRC-XX

FUNCTIONAL AREA	TROUBLE SHOOTING PARAGRAPH	TROUBLE SHOOTING DIAGRAM	FUNCTIONAL DESCRIPTION PARAGRAPH	ALIGNMENT/ ADJUST PARAGRAPH
AC Power	5-3	5-8	3-9a	6-105, 6-106
DC Power	5-4	5-19	3-9b	6-107 through 6-110, 6-127
Keying	5-5	5-24	3-13	6-22
Receive RF	5-8	5-1	3-4	6-112 through 6-115
System Channel and Frequency Selection	5-9	5-16	3-10, 3-12	6-121

Figure 14. Troubleshooting Index.

TABLE ZZ. RELAY INDEX

REFERENCE DESIGNATION	FUNCTIONAL NAME	ENERGIZING VOLTAGE	TROUBLE-SHOOTING DIAGRAM (FIG. NO.)
6A4K9	HV Door Interlock	115 Vac	5-21
6A4K10	Cabinet Interlock	28 Vdc	5-22
6A4K11	Buzzer Relay	28 Vdc	5-22

TABLE ZZ. INDICATOR LAMP INDEX

REFERENCE DESIGNATION	FUNCTIONAL NAME	ENERGIZING VOLTAGE	TROUBLE-SHOOTING DIAGRAM (FIG. NO.)
9A8DS15	HV INTERLOCK CONFIDENCE-VSWR TRIP-OUT	28 Vdc	5-22
9A8DS16	HV INTERLOCK CONFIDENCE-HVPS	28 Vdc	5-22

TABLE ZZ. CIRCUIT BREAKER AND FUSE INDEX

REFERENCE DESIGNATION	FRONT PANEL MARKING	RATING		CIRCUIT PROTECTED	TROUBLE-SHOOTING DIAGRAM (FIG. NO.)
		VOLTS	AMPS		
9A8F1	KLYSTRON FILAMENT FUSE ALARM 5 AMP	250	5	Klystron filament control circuit and filament transformer 9A1T106.	5-32
14A2F1	CONTROL	125	3	Voltage sensor bridge power supply consisting diodes 13A2CR1 through CR4.	5-2

Figure 15. Relay, Lamp and Protective Device Indexes.

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MIL-M-15071G(NAVY)

MIL-M-15071G(NAVY)

TABLE ZZ. MAINTENANCE TURN-ON PROCEDURE

STEP	OBSERVE	REFERENCE								
<p>1. Preliminary Procedure.</p> <p>a. Position the following switches on rear deck assembly 1A210A1 as indicated.</p> <table><tr><td><u>Switch</u></td><td><u>Position</u></td></tr><tr><td>POWER</td><td>OFF</td></tr><tr><td>BATTLE SHORT</td><td>OFF</td></tr><tr><td>STOW</td><td>BRAKES APPLY</td></tr></table> <p>b. Position POWER switch on console, 1A220A20 (see figure 5-2) to OFF.</p> <p>c. Check to ensure that all chassis or subassemblies in the four compartments of electronic rack assembly, 1A70 are in the retracted position and all covers are secured.</p> <p>d. Remove all obstructions from the rotational paths of the director main antenna assembly.</p>	<u>Switch</u>	<u>Position</u>	POWER	OFF	BATTLE SHORT	OFF	STOW	BRAKES APPLY	<p>Covers Secured</p> <p>Director Clear</p>	
<u>Switch</u>	<u>Position</u>									
POWER	OFF									
BATTLE SHORT	OFF									
STOW	BRAKES APPLY									
<p>2. Power Off.</p> <p>a. At power control panel perform the following.</p> <p>(1) Check convenience lamp indicators.</p>	<p>Lighted</p>	<p>Schematic, figure 5-233</p>								
<p>e. At track meter panel, 1A340-02, check COOLANT FAILURES lamp.</p>	<p>Extinguished (Depress RESET button if lamp is lighted)</p>	<p>Relay diagram, figure 5-77, SH 4(4B)</p>								

Figure 16. Maintenance Turn-on Procedure.

57/58

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TEST DATA

GENERAL NOTES

- A. Test Equipment Required
 Signal Generator AN/USM-44 or equivalent
 RF Millivoltmeter CGVO-31-DA or equivalent
 20-dB, 50ohm attenuator (part of Power Measuring Set AN/USM-177B)
 6-dB, 50-ohm attenuator Microlab Type AA-06N or equivalent
 Multimeter AN/PSM-4B or equivalent
 Oscilloscope AN/USM-140D or equivalent
- B. If necessary, refer to paragraph 5-6.7 for troubleshooting sequence and figure 5-15 for physical location of test points.

SPECIFIC NOTES

1. Make the following preliminary control settings:

UNIT	CONTROL	POSITION
Switch Box 5AKXX/SP	STOP-OPERATE switch 1781	OPERATE
Radio Frequency Transmission Line Line Switch 5A-XXX/U	DUMMY-NORMAL 1A183	Dummy load position
Electron Tube Liquid Cooler ND-XXX/SP	POWER switch 1081	ON

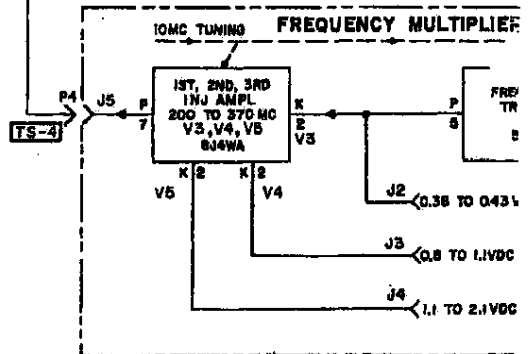
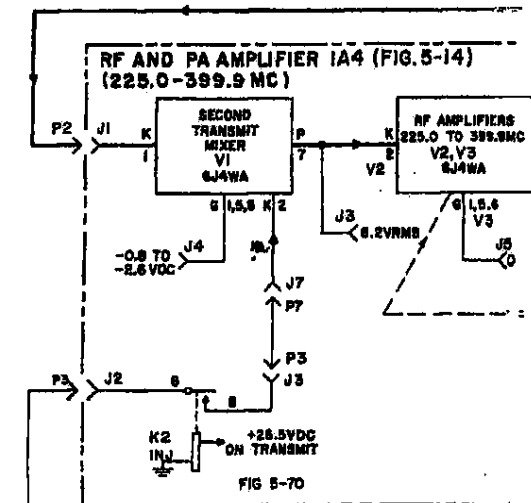
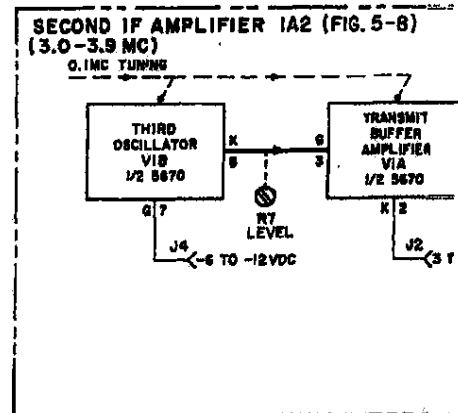
2. Monitor scope set-ups:

POWER switch - ON
 OPERATION switch - REMOTE
 TRIGGER SELECT switch - EXT
 DELAY MULTIPLIER switch - OFF
 VERTICAL GAIN control - CAL position

3. Test Steps:

(For steps out of tolerance, refer to paragraph 5-6.7.)

- TS1** Refer to note 1 before performing test, except ignore pulse generator cabinet settings. Open outer door of receiver. Then open inner door while holding MOMENTARY INTERLOCK BYPASS switch 482 closed; engage PULLOUT TO BYPASS INTLK switch 481 before releasing switch 482. Connect tee-adaptor between 4A3P1 and 4A3GPI. Connect probe of rf millivoltmeter to open end of tee-adaptor. At control monitor, successively select each of the 20 channels using CHANNEL SELECTOR switch 6A382. Input measured on rf millivoltmeter should be at least 0.7 volt rms for each channel.
- TS2** Same as TS1, except connect tee-adaptor between 9A1P5 and 4A1J5.
- TS3** Refer to note 1 before performing test, except ignore pulse generator cabinet settings. Set up control-monitor cabinet monitor scope per note 2. Place CONTROL POSITION switch 6A386 in LOCAL position. Place MONITOR DISPLAY SELECTOR switch 6A181 in Dx BIAS PULSE position.
- TS4** Refer to note 1 before proceeding. Connect sync input of Oscilloscope AN/USM-140D to a tee-adaptor connected between 20A1A1P1 and 20A1A1J1 (A trigger). Connect oscilloscope probe to test point via tee-adaptor.



Note: Sample arrangement only. Size and legibility do not conform to minimum specification requirements. Supplementary data appears on an apron.

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MIL-M-15071G(NAVY)

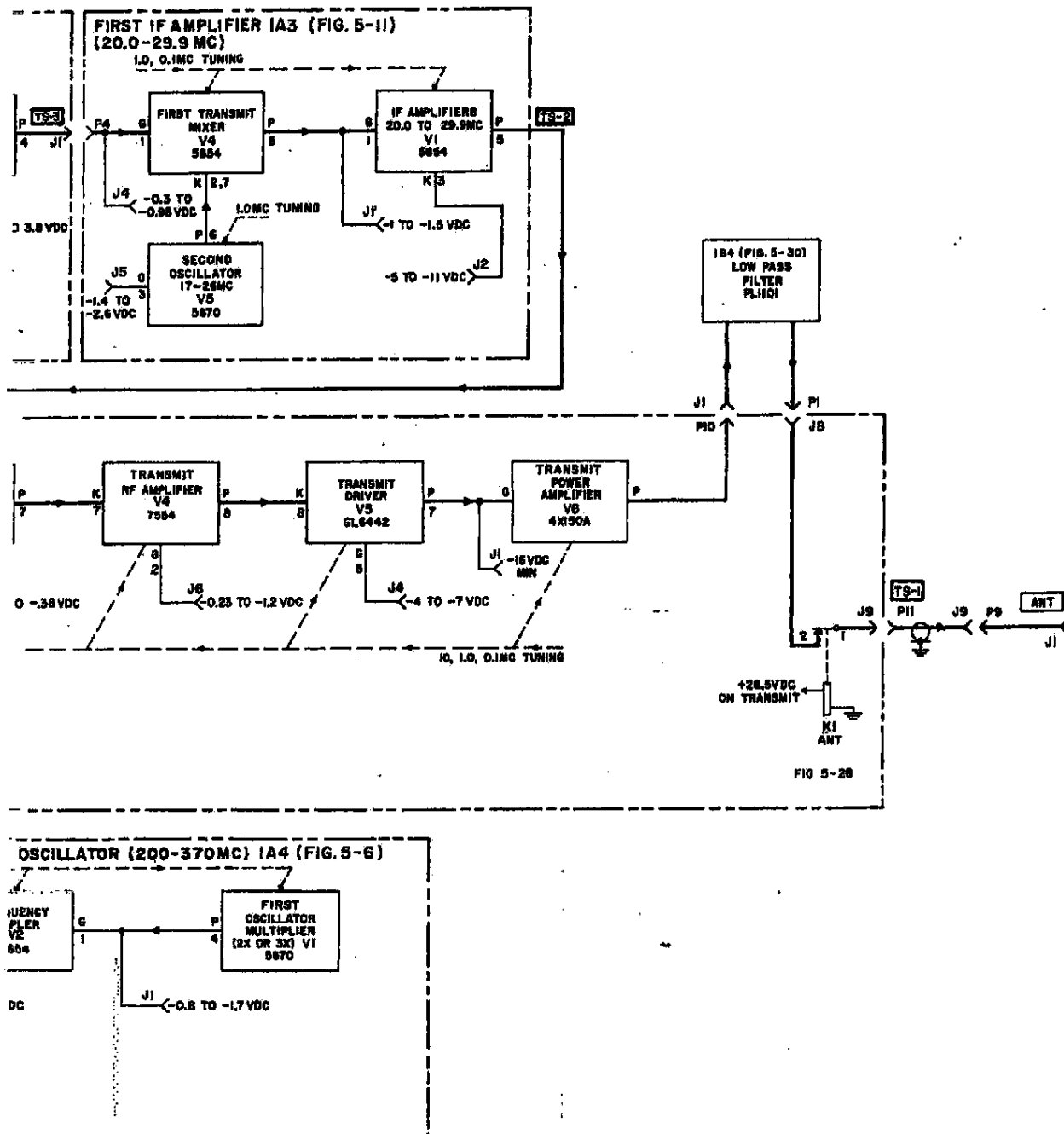


Figure 17. Functional Signal Flow Diagram.

59/60

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This schematic diagram illustrates a hydraulic system for a mobile machine, featuring a pump, reservoir, control valves, and actuators. The system is divided into several functional sections:

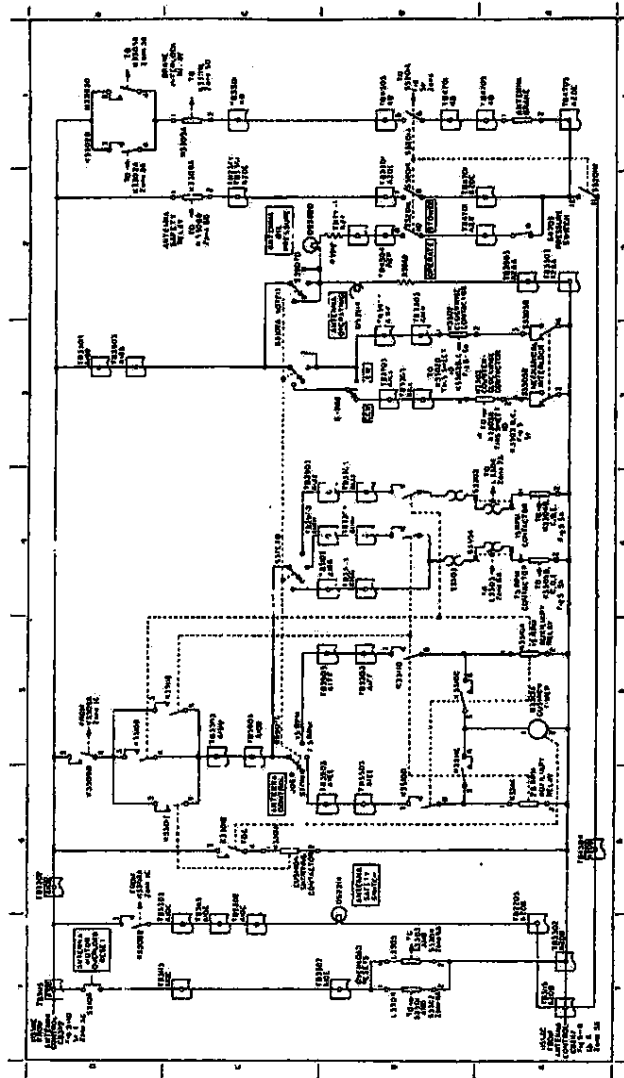
- Power Section:** Located at the top left, it includes a pump (1) driven by an engine (2). The pump draws fluid from a reservoir (3) and discharges it into a main line. A pressure gauge (4) is connected to this line.
- Control Section:** This section contains several control valves, including a directional control valve (5) and a pressure-reducing valve (6). These valves are used to regulate the flow and pressure of the hydraulic fluid.
- Actuator Section:** The bottom right section shows the actuators, which are hydraulic cylinders (7 and 8). These cylinders are connected to the main line via control lines and are used to perform mechanical work.
- Reservoir and Return Section:** The bottom left section shows the return line, which leads back to the reservoir (3). A filter (9) is installed in this line to ensure the fluid is clean.
- Pressure Gauges:** Several pressure gauges (10, 11, 12, 13) are connected to different parts of the system to monitor pressure levels.
- Labels and Annotations:** Various labels are present throughout the diagram, such as "HYDRAULIC OIL", "PRESSURE GAUGE", "DIRECTIONAL CONTROL VALVE", and "HYDRAULIC CYLINDER".

The diagram uses standard hydraulic symbols to represent the various components and their interconnections. The flow of fluid is indicated by arrows, showing the path from the pump through the control valves to the actuators and back to the reservoir.

Figure 18. Piping Diagram.

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MIL-M-15071G(NAVY)



WARNING

DANGEROUS VOLTAGES ARE PRESENT EVEN
THROUGH CONDITIONS OF NOTES A AND B
ARE MET.

GENERAL NOTES

- SWITCHES AND RELAY CONTACTS SHOWN IN
STOP MODE OF OPERATION.
- SWITCHES SHOWN AND SHOWN ARE SHOWN IN A
STOP CONDITION.
- SHOWN IS LOCATED AGAINST THE FRONT PANEL.

PART LOCATION INDEX

Zone	Ref	Zone	Ref
5A	K3212D	5B	TS200A-A10C
5C	TS211E	5D	TS200A-A10C
5E	TS200A	5F	TS200A-A10C
5G	TS200A	5H	TS200A-A10C
5I	TS200A	5J	TS200A-A10C
5K	TS200A	5L	TS200A-A10C
5M	TS200A	5N	TS200A-A10C
5O	TS200A	5P	TS200A-A10C
5Q	TS200A	5R	TS200A-A10C
5S	TS200A	5T	TS200A-A10C
5U	TS200A	5V	TS200A-A10C
5W	TS200A	5X	TS200A-A10C
5Y	TS200A	5Z	TS200A-A10C
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5S	TS200A	5T	TS200A-A10C
5U	TS200A	5V	TS200A-A10C
5W	TS200A	5X	TS200A-A10C
5Y	TS200A	5Z	TS200A-A10C
5A	TS200A	5B	TS200A-A10C
5C	TS200A	5D	TS200A-A10C
5E	TS200A	5F	TS200A-A10C
5G	TS200A	5H	TS200A-A10C
5I	TS200A	5J	TS200A-A10C
5K	TS200A	5L	TS200A-A10C
5M	TS200A	5N	TS200A-A10C
5O	TS200A	5P	TS200A-A10C
5Q	TS200A	5R	TS200A-A10C
5S	TS200A	5T	TS200A-A10C
5U	TS200A	5V	TS200A-A10C
5W	TS200A	5X	TS200A-A10C
5Y	TS200A	5Z	TS200A-A10C
5A	TS200A	5B	TS200A-A10C
5C	TS200A	5D	TS200A-A10C
5E	TS200A	5F	TS200A-A10C
5G	TS200A	5H	TS200A-A10C
5I	TS200A	5J	TS200A-A10C
5K	TS200A	5L	TS200A-A10C
5M	TS200A	5N	TS200A-A10C
5O	TS200A	5P	TS200A-A10C
5Q	TS200A	5R	TS200A-A10C
5S	TS200A	5T	TS200A-A10C
5U	TS200A	5V	TS200A-A10C
5W	TS200A	5X	TS200A-A10C
5Y	TS200A	5Z	TS200A-A10C
5A	TS200A	5B	TS200A-A10C
5C	TS200A	5D	TS200A-A10C
5E	TS200A	5F	TS200A-A10C
5G	TS200A	5H	TS200A-A10C
5I	TS200A	5J	TS200A-A10C
5K	TS200A	5L	TS200A-A10C
5M	TS200A	5N	TS200A-A10C
5O	TS200A	5P	TS200A-A10C
5Q	TS200A	5R	TS200A-A10C
5S	TS200A	5T	TS200A-A10C
5U	TS200A	5V	TS200A-A10C
5W	TS200A	5X	TS200A-A10C
5Y	TS200A	5Z	TS200A-A10C
5A	TS200A	5B	TS200A-A10C
5C	TS200A	5D	TS200A-A10C
5E	TS200A	5F	TS200A-A10C
5G	TS200A	5H	TS200A-A10C
5I	TS200A	5J	TS200A-A10C
5K	TS200A	5L	TS200A-A10C
5M	TS200A	5N	TS200A-A10C
5O	TS200A	5P	TS200A-A10C
5Q	TS200A	5R	TS200A-A10C
5S	TS200A	5T	TS200A-A10C
5U	TS200A	5V	TS200A-A10C
5W	TS200A	5X	TS200A-A10C
5Y	TS200A	5Z	TS200A-A10C
5A	TS200A	5B	TS200A-A10C
5C	TS200A	5D	TS200A-A10C
5E	TS200A	5F	TS200A-A10C
5G	TS200A	5H	TS200A-A10C
5I	TS200A	5J	TS200A-A10C
5K	TS200A	5L	TS200A-A10C
5M	TS200A	5N	TS200A-A10C
5O	TS200A	5P	TS200A-A10C
5Q	TS200A	5R	TS200A-A10C
5S	TS200A	5T	TS200A-A10C
5U	TS200A	5V	TS200A-A10C
5W	TS200A	5X	TS200A-A10C
5Y	TS200A	5Z	TS200A-A10C
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5C	TS200A	5D	TS200A-A10C
5E	TS200A	5F	TS200A-A10C
5G	TS200A	5H	TS200A-A10C
5I	TS200A	5J	TS200A-A10C
5K	TS200A	5L	TS200A-A10C
5M	TS200A	5N	TS200A-A10C
5O	TS200A	5P	TS200A-A10C
5Q	TS200A	5R	TS200A-A10C
5S	TS200A	5T	TS200A-A10C
5U	TS200A	5V	TS200A-A10C
5W	TS200A	5X	TS200A-A10C
5Y	TS200A	5Z	TS200A-A10C
5A	TS200A	5B	TS200A-A10C
5C	TS200A	5D	TS200A-A10C
5E	TS200A	5F	TS200A-A10C
5G	TS200A	5H	TS200A-A10C
5I	TS200A	5J	TS200A-A10C
5K	TS200A	5L	TS200A-A10C
5M	TS200A	5N	TS200A-A10C
5O	TS200A	5P	TS200A-A10C
5Q	TS200A	5R	TS200A-A10C
5S	TS200A	5T	TS200A-A10C
5U	TS200A	5V	TS200A-A10C
5W	TS200A	5X	TS200A-A10C
5Y	TS200A	5Z	TS200A-A10C
5A	TS200A	5B	TS200A-A10C
5C	TS200A	5D	TS200A-A10C
5E	TS200A	5F	TS200A-A10C
5G	TS200A	5H	TS200A-A10C
5I	TS200A	5J	TS200A-A10C
5K	TS200A	5L	TS200A-A10C
5M	TS200A	5N	TS200A-A10C
5O	TS200A	5P	TS200A-A10C
5Q			

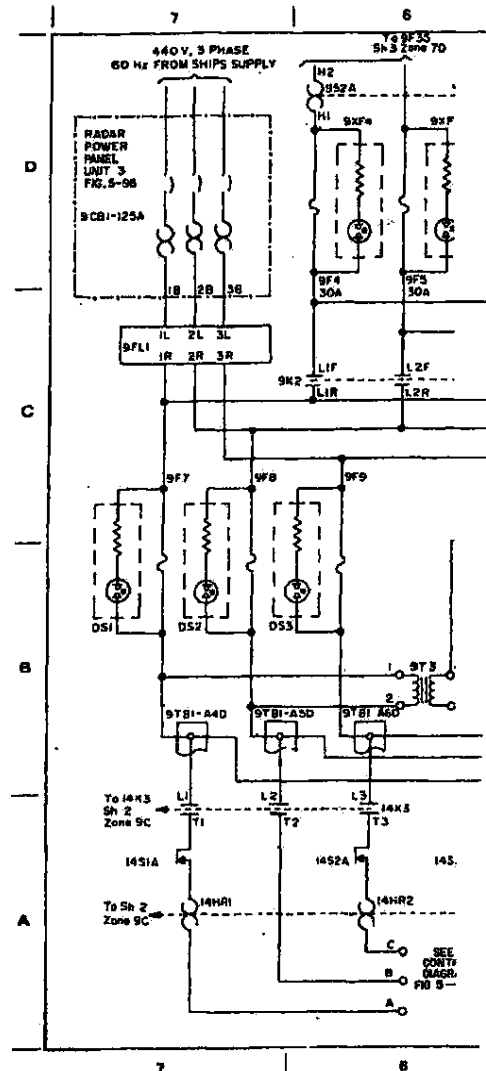
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NOTE:
A. ALL RELAYS AND SWITCHES ARE SHOWN IN
OPERATING POSITION.

PART LOCATION INDEX

Ref Des	Zone	Ref Des	Zone	Ref Des	Zone	Ref Des	Zone
DS1	7B	7DS3	2C	9K2-L2F	6C	9TB1-A6D	6B
DS2	7B	7DS4	3C	9K2-L2R	6C	9TB2-A7B	6B
DS3	7B	7DS6	3C	9K2-L3F	6C	9TB2-A8C	6B
1FL5	4A	7F1	2C	9K2-L3R	6C	9TB2-A8D	6B
1FL6	4A	7F2	3C	9K2-1F	3B	9TB2-A8E	6B
1T1	4A	7F3	3C	9K3-1R	3B	9XF1	2B
1TB2-A4H	4A	7T12	2C	9K3-2F	3B	9XF2	2B
3B1	3C	7TB10-15	2C	9K3-2R	3B	9XF3	2B
3FL42	4D	7TB10-16	2C	9K3-3F	4B	9XF4	6D
3FL43	4C	7TB10-17	2C	9K3-3R	4B	9XF5	6D
3FL44	4C	7TB10-18	2C	9K3-4F	4B	9XF6	6D
3TB3-A4C	4C	9CB1	7C	9K3-4R	4B	9XF10	4B
3TB3-A5C	4D	9F1	2B	9K4B-1B	2C	9XF11	3A
3TB3-A6C	4C	9F2	2B	9K4B-1T	2C	9A2T1	4A
3TB4-1	4D	9F3	2B	9K4C-2B	3C	9A2T2	3A
3TB4-2	4C	9F4	7C	9K4C-2T	3C	9A2TB3-4	4A
3TB4-3	4C	9F5	6C	9K4D-3B	3C	9A2TB3-4-1	4A
5T1	2A	9F6	6C	9K4D-3T	3C	9A2TB4-2	3A
5T2	2A	9F7	7B	9M1	3A	9A2TB4-4	3A
6T3	2A	9F8	7B	9B1A	3B	10B1	5D
5TB8-A7B	5B	9F9	6B	9B1B	3B	10B1	6D
5TB15-A5A	2A	9F10	4B	9B2A	7D	10T1	5D
5TB15-A5A	2A	9F11	3A	9B3A	6D	10TB1-2	5D
5TB15-A5A	2A	9F12	5D	9T3	6B	10TB1-A7A	4D
6A5DS1	5B	9F13	5C	9T4	4B	10TB1-A8A	4D
6A5DS9	5B	9F14	5C	9T5	4B	10TB2-2	5D
6A5DS19	4D	9FL1	7C	9TB1-A4B	7D	10TB2-3	5D
6A5DS22	5B	9K1A-1F	2B	9TB1-A4C	6D	10A2F1	4D
6A5DS52	1C	9K1A-1R	2B	9TB1-A4D	7B	10A2T1	4D
6A5R1	5B	9K1B-2F	2B	9TB1-A5B	6D	10A2TB1-1	4D
6A5R8	5B	9K1B-2R	2B	9TB1-A5C	5C	10A2TB1-2	4D
6A5R19	4D	9K1C-3F	2B	9TB1-A5D	7B	14HR1	7A
6A5R22	5B	9K1C-3R	2B	9TB1-A5H	3A	14HR2	6A
6A5R52	1C	9K2-L1F	7C	9TB1-A6B	6D	14HR3	6A
7B2	3D	9K2-L1R	7C	9TB1-A6C	5C	14HR4	5A

Note: Sample arrangement only. Size and legibility do not conform to minimum specification requirements. Supplementary data appears on an apron.



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MIL-M-15071G(NAVY)

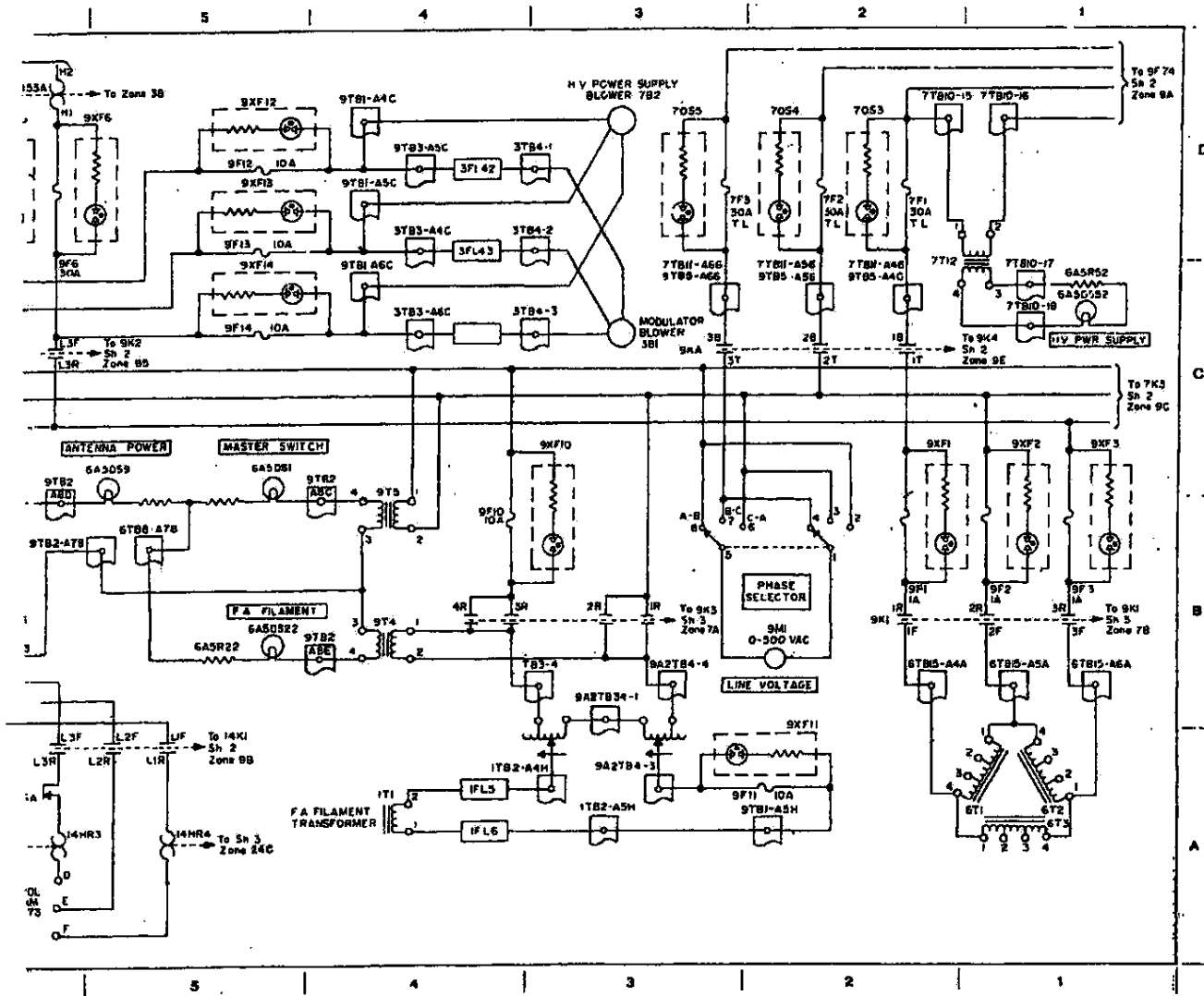


Figure 20. Power Distribution Diagram.

63/64


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GENERAL NOTES

UNLESS OTHERWISE SPECIFIED:

- UNLESS OTHERWISE SPECIFIED:
- A. ALL RESISTANCE VALUES ARE IN OHMS, 1/4W, ±5%.
 - B. ALL CAPACITANCE VALUES ARE IN MICROFARADS.
 - C. ALL DIODES ARE 1N916.
 - D. ALL TRANSISTORS ARE 2N718.
 - E.  FEEDBACK

PART LOCATION INDEX

REF DES	ZONE	REF DES	ZONE	REF DES	ZONE	REF DES	ZONE
C1	6C	CR12	2C	R2	8C	R32	2B
C2	6C	CR13	2B	R3	8C	R33	2B
C3	6C	CR14	1C	R4	6C	R34	2B
C4	5C	CR15	1C	R5	6C	R35	3B
C5	5C	CR16	1C	R6	6C	R36	3B
C6	5C	CR17	2C	R7	6C	R37	6C
C7	4C	CR18	2C	R8	6C	R38	5B
C8	5A			R9	5C	R39	5B
C9	4A	DL1	2C	R10	5C	R40	5B
C10	4C			R11	5C	R41	5B
C11	3C	J102	6C	R12	5C	R42	5B
C12	3C			R13	5C	R43	4B
C13	3C	Q1	6C	R14	5B	R44	4B
C14	5A	Q2	5C	R15	4C	R45	2C
C15	2B	Q3	5C	R16	4C	R46	1C
C16	2B	Q4	4C	R17	8A	R47	5B
C17	3B	Q5	4C	R18	4C	R48	5B
C18	5B	Q6	3C	R19	4C	R49	5B
		Q7	2B	R20	4C	R50	5B
CR1	5C	Q8	2B	R21	4C	R51	6A
CR2	5C	Q9	3B	R22	4C		
CR3	4C	Q10	6B	R23	4C	T1	6C
CR4	3C	Q11	5B	R24	3C	T2	5C
CR5	3C	Q12	5B	R25	3C	T3	5C
CR6	3C	Q13	4B	R26	3C	T4	3C
CR7	3C	Q14	2C	R27	3C	T5	2C
CR8	3C	Q15	1C	R28	2B	T6	1C
CR9	2B			R29	2B		
CR11	4B	R1	8C	R31	2B	IAP1	1C

CAUTION

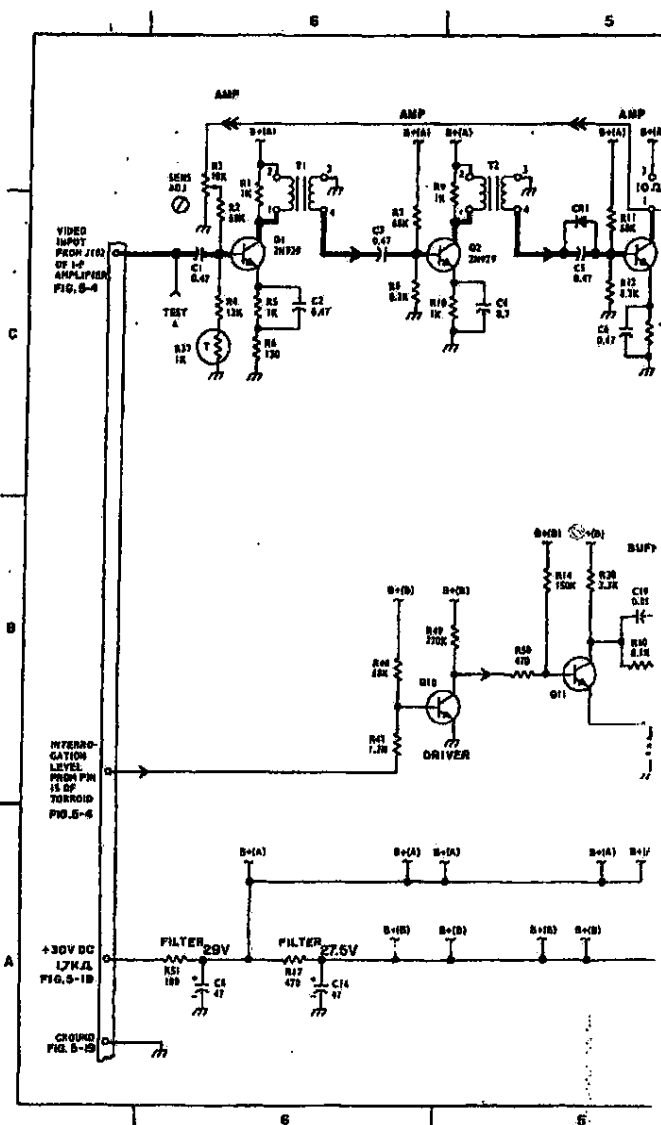
Use ohmmeter on highest usable scale to avoid damage to transistors.

VOLTAGE CHART

	E	B	C		E	B	C
Q ₁	+2V	+1V	+10V	Q ₁₁	+5V	+1V	+20V
Q ₂	+3V	+2.8V	+17V	Q ₁₂	+6V	+8V	+17V

SPECIFIC NOTES:

1. All voltage readings taken with equipment in
STANDBY.



Note: Sample arrangement only. Size and legibility do not conform to minimum specification requirements. Supplementary data appears on an apron.

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1A1A2

TRANSPONDER ASSEMBLY 1A1A2

65/66

Note: Sample arrangement only. Size and legibility do not conform to minimum specification requirements.

Note: Sample arrangement only. Size and legibility do not conform to minimum specification requirements.

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MIL-M-15071G(NAVY)

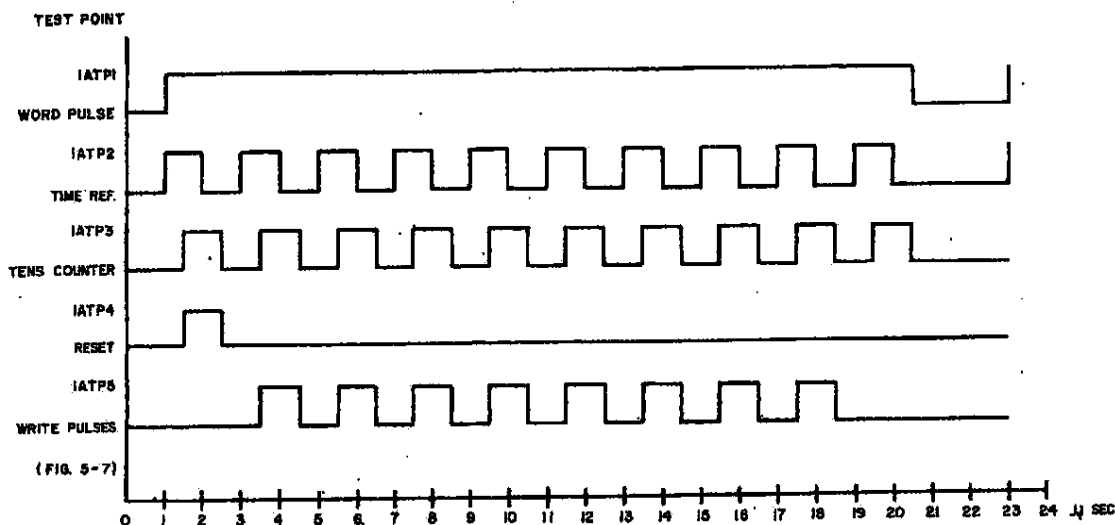


Figure 24. Timing Circuits Diagram.

XYZ ROUTINE - PROGRAM LISTING								
LOC	MEMORY CONTENTS	LABEL	ORD	ADR	MOD	CONSTANT	SCL	NOTES
01443	000330700		FRS	30700				
01447	015101457		TMI	01457				
01453	034706277		TRA	06277				
01457	000077632		GET	37632				
01463	034706403		ORG	06403				
			ORG	06103				
06103	001037632	A1	STO	TEMPR	1			SAVE INSERTED NUMBER
06107	035106123		TMI	A3				/-/ NEGATIVE INSERT
06113	014077763	A2	GET	ONE				KEY FOR FIX RESET
06117	035035357		STO	KTYPF				TYPE OF RESET KEY
05123	000077760	A3	GET	ZERO				
06127	035037633		STO	TEMPR	2			CLEAR RESET /NRS/ KEY
06122	000077632		GET	TEMPR	1			
06137	004706147		TRA	SUB 1				GO TO RESET NUMBER SUBROUTINE
06143	000706327		TRA	A14				
06137	055437634	SUB 1	STV*	TEMPR	3			ENTRANCE - RESET NUMBER SUBRTN
06153	034313700	A4	PRS	1				
06157	035106243		TMI	RE13				CHECK LAST BCD BIT FOR SIGN
06163	034313700	A5	PRS	1				
05167	035106213		TMI	**5				CHECK 2ND BCD BIT FOR SIGN
06173	034333600	A6	FRS	2				CHECK 3RD AND 4TH BITS
06177	002206177		TMI	OUT				
06203	034077633	A7	GET	TEMPR	2			TEMPORARY RESET KEY
06207	005737634		TRA	TEMPR	3			EXIT - RESET NUMBER SUBROUTINE
06213	005077766	A8	EXT	MAXNO				
06217	034333600	FRS	FRS	2				CHECK 3RD AND 4TH BITS
06223	002206277		TMI	OUT				
06227	044041030	A9	GET			020000000		KEY TO RESET 2
06233	005477633	A10	ADD	TEMPR	2			
06237	005737344		TRA	TEMPR	3			EXIT - RESET NUMBER ROUTINE
06243	034313700	RE13	PRS					
06247	035106303		TMI	RE3				CHECK 2ND BIT FOR SIGN
06253	034077766	A11	EXT	MAXNO				
06257	034333600		FRS	2				CHECK 3RD AND 4TH BITS
06263	001106277		TMI	OUT				
06267	034077762	A12	GET	HALF				KEY TO RESET 1

Figure 25. Coding Instruction Sheet.

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MIL-M-15071G(NAVY)

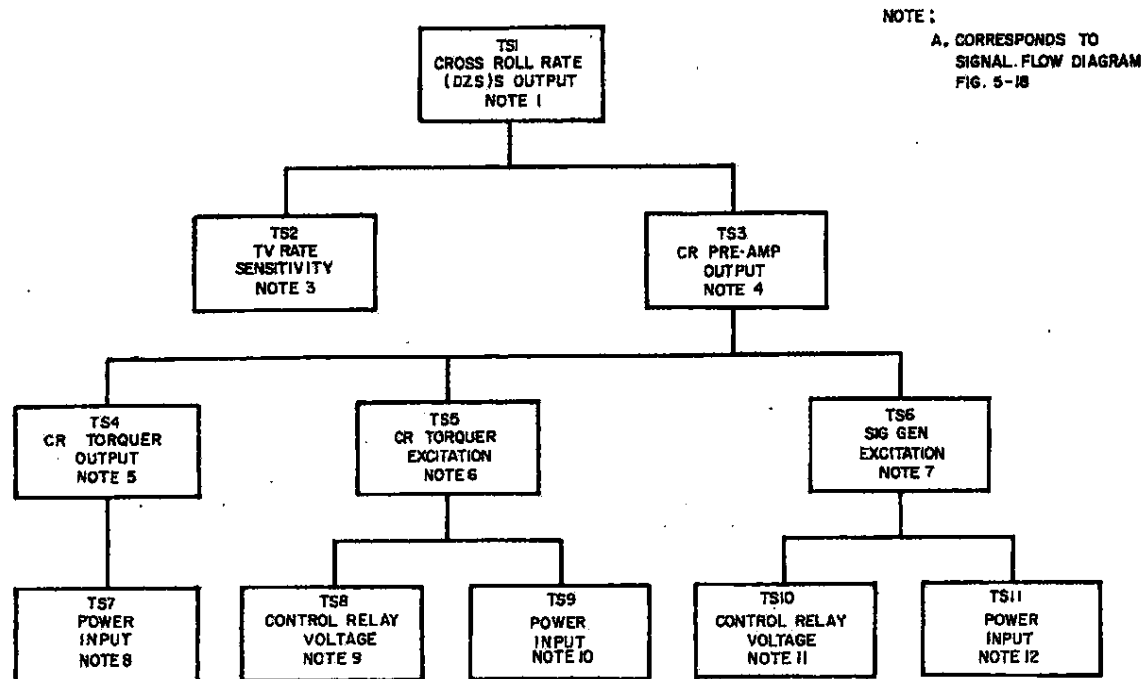


Figure 26. Troubleshooting Functional Dependency Diagram.

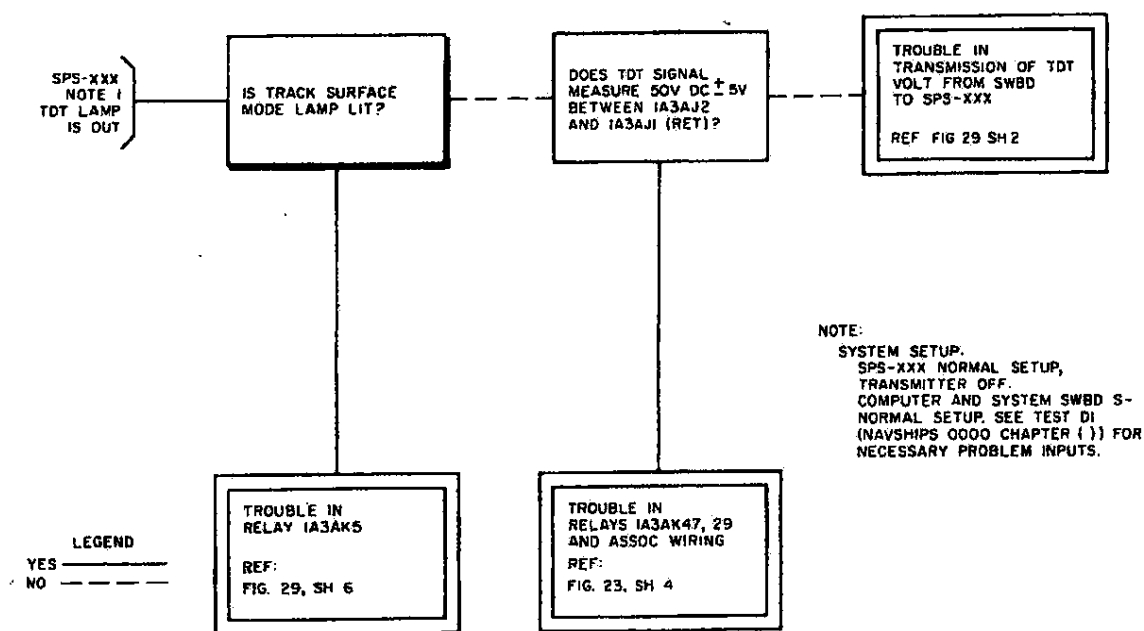


Figure 27. Fault Logic Diagram.

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MIL-M-15071G(NAVY)

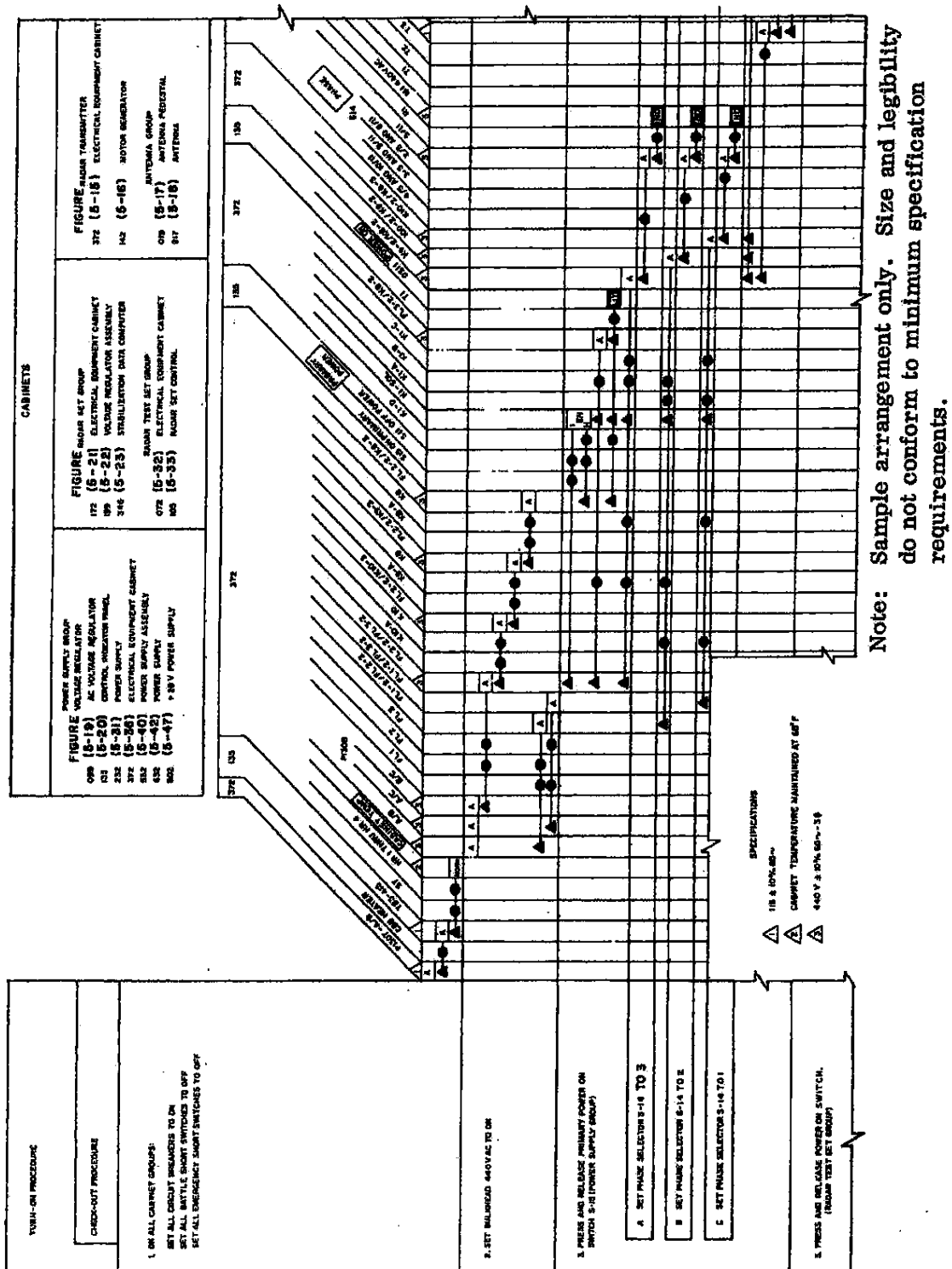


Figure 28. Troubleshooting-Maintenance Dependency Matrix Chart.

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MIL-M-15071G(NAVY)

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	NOTES
6-19		J75 ENGINE SPECIAL SUPPORT EQUIPMENT	
-1	MMU4E	. STAND ASSY, ENGINE WORK	MODEL B ONLY
-2	8-96165	. ADAPTER KIT, ENGINE REMOVAL STAND FOR BREAKDOWN SEE FIG. 7-18	
-3	8-96938-1	. ADAPTER KIT, ENGINE AND SHROUD REMOVAL DORMER CO. SPEC. 6690068 FOR BREAKDOWN SEE FIG. 7-19	
-4	8-96938-2	. ADAPTER KIT, SUPPORT, SHROUD REMOVAL FOR BREAKDOWN SEE FIG. 6-47	
-5	8-96938-5	. ADAPTER KIT, FITTING, TRANSPORTATION AND GROUND TEST RUN-UP . . FOR BREAKDOWN SEE FIG. 7-15	
-6	SE1012-603	. STAND ASSY, ENGINE HANDLING FOR BREAKDOWN SEE T. O. 35D3-3-38-4	D

Figure 29. Parts List Table (Type I Manual).

TABLE ZZ. RADAR SET AN/SPS-XX, PARTS LIST

Amplifier-Oscillator Group OA-2815/SPS-XX (Unit 2)

Reference Designation	Notes	Name and Description	Figure Number (Item)
2		AMPLIFIER-OSCILLATOR GROUP OA-2815/SPS-XX: Provides drive power for AN/SPS-XX final stage, made in three cabinets which can be separated; mfr 89661, part no. 478D-800G02.	1-1
2AT1	1	ATTENUATOR, FIXED: 50 ohms, 1 watt, bnc type connector; mfr 91578, type RT3-M-51. (Attaching Parts) B (1), T (4)	6-119(17)
2B1		FAN, CENTRIFUGAL: Cw rotation, 3 o'clock blast, aluminum case, 6-13/32 in. long, 6-7/16 in. w; mfr 82877, type DRFPKS406, 89661, dwg 331C158H03. (Attaching Parts) L(8), T(8), X(8)	6-119(42)
2C1 thru 2C8		CAPACITOR, FIXED, PAPER DIELECTRIC: 0.01 μ F \pm 10%, 600 Vdc working; mfr 56289, part no. 102P15, 89661, dwg 54B7098H07.	6-119

Figure 30. Parts List Table (Type II Manual).

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MIL-M-15071G(NAVY)

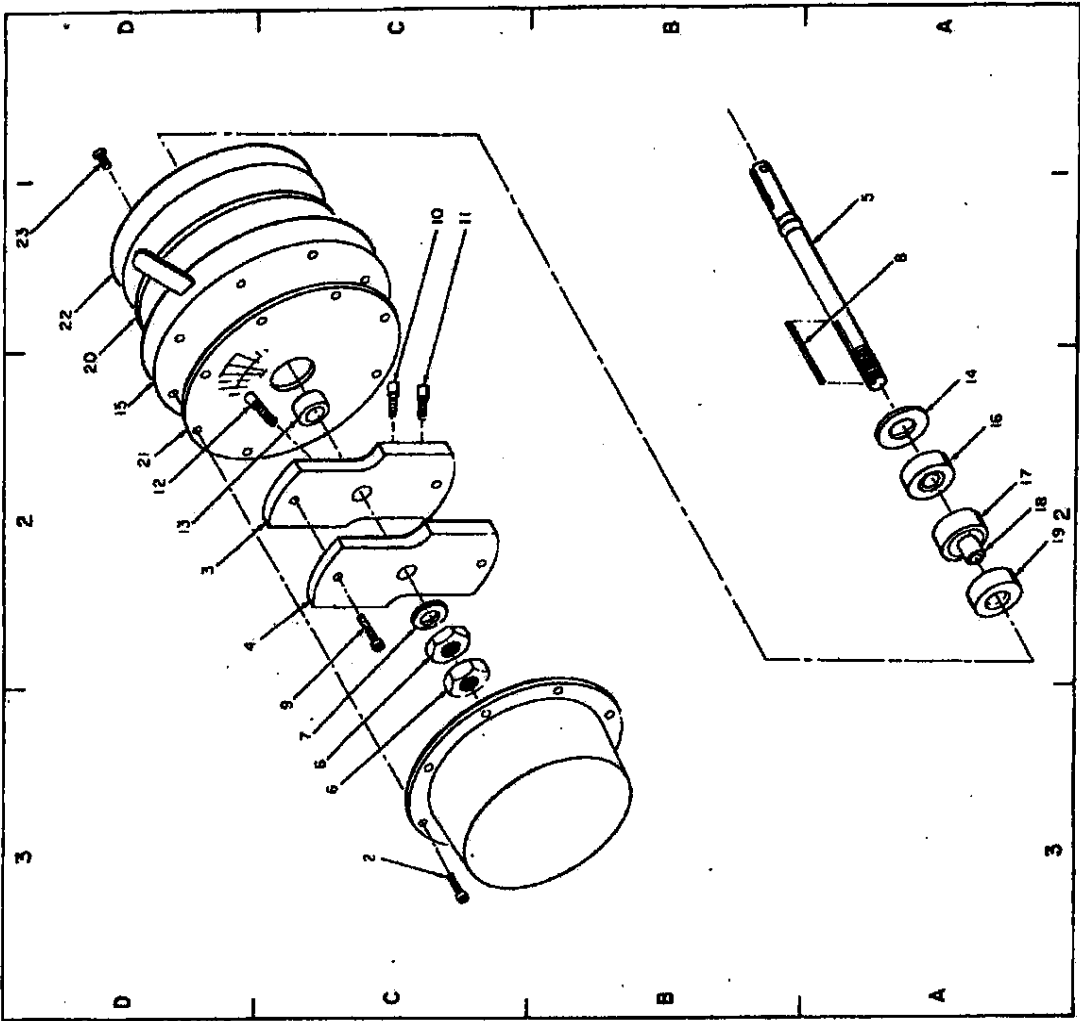


Figure 31. Exploded View.

Index No.	Zone	Part Number	Qty	Reference Designation
1	3B	Commutator Cover	1	MP2
2	3C	Socket-Head Cap Screw	8	MP18
3	2D	Wiper	1	MP11
4	--	Not Used	---	--
5	1A	Commutator Shaft	1	MP13
6	3C	Hex Nut	2	MP8
7	3C	Washer	---	MP15
8	1A	Key	---	MP14
9	3C	Socket-Head Cap Screw	4	MP20
10**	1C	Brush	2	MP9
11**	1C	Brush	4	MP11
12**	2D	Wiper	6	MP10
13	2D	Wiper	---	MP12
14	1A	Commutator Hub	---	MP2
15	2D	Commutator Hub	---	MP2
16	2A	Ball Bearing	---	MP4
17, 18	2A	Bearing Spacer Assembly	---	MP15
19	3A	Ball Bearing	---	MP4
20	2D	Insulator	---	MP21
21	2D	Printed Circuit	---	MP22
22	2D	Rear Cover	---	MP23
23	1D	Flat-Head Screw	2	MP24

* Reference Designation Prefix Is 12A17A1A1 unless otherwise stated.
**Items to be segregated when removed for replacement at reassembly. Refer to Parts List for procurement information.

Note: Sample arrangement only.
Size and legibility do not conform to minimum specification requirements.
Supplementary data normally appears on an apron.

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MIL-M-15071G(NAVY)

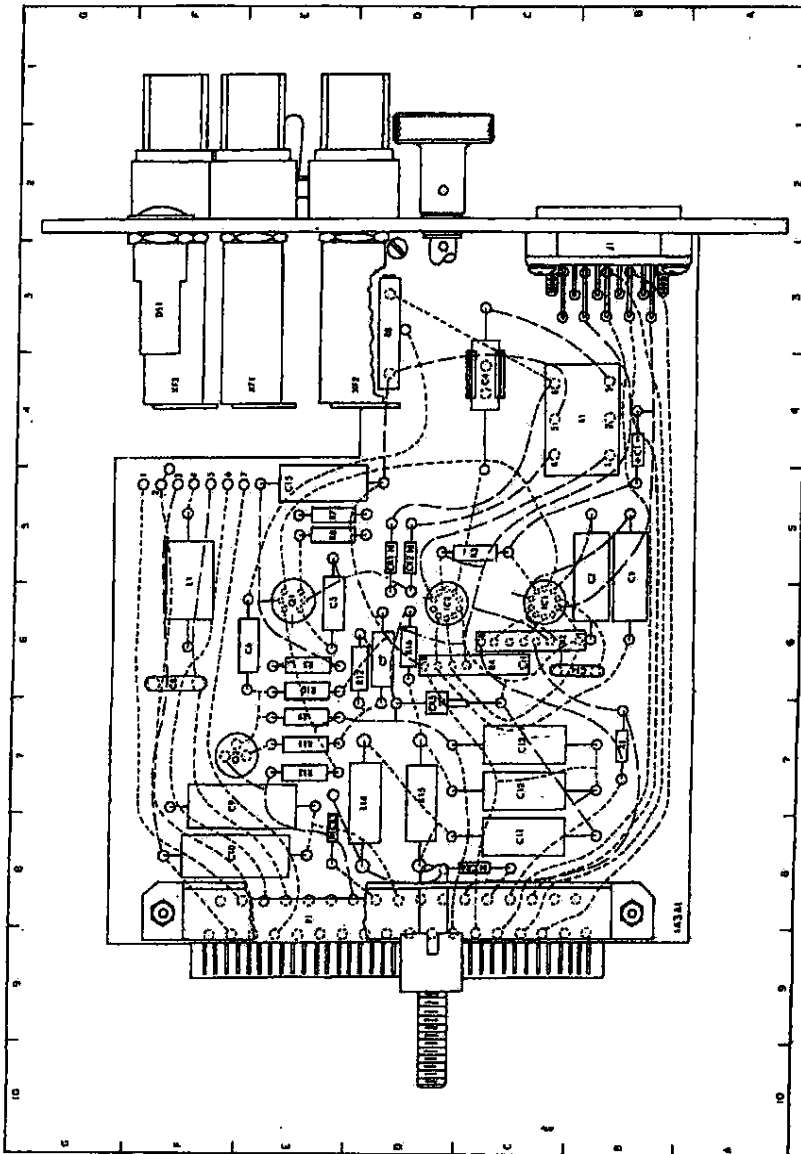


Figure 32. Engineering Drawing.

PARTS LOCATION INDEX			
ASSEMBLY 1A3A1			
REFERENCE DESIGNATION	LOCATION	REFERENCE DESIGNATION	LOCATION
C1	4-B	P1	8-E
C2	5-B		
C3	5-B	Q1	6-E
C4	4-C	Q2	7-F
C5	6-E		
C6	5-E	R1	7-B
C7	6-D	R2	8-C
C8	6-F	R3	5-C
C9	7-F	R4	6-C
C10	8-F	R5	6-E
C11	8-C	R6	5-E
C12	7-C	R7	5-E
C13	7-C	R8	3-D
C14	7-D	R9	7-E
C15	5-E	R10	6-E
C16	5-D	R11	7-E
C17	5-D	R12	6-D
C18	8-E	R13	7-E
C19	8-C	R14	7-D
C20	7-D	R15	7-D
C21	3-F	R16	6-D
C22	3-F	T1	4-B
C23	3-C	XF1	4-E
C24	8-D	XF2	4-D
C25	3-B	XF3	4-F
C26	6-F		
C27			
C28			
C29			
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Note: Sample arrangement only. Size and legibility do not conform to minimum specification requirements. Supplementary data appears on an apron.

--- COMPONENT SIDE
--- BACK SIDE

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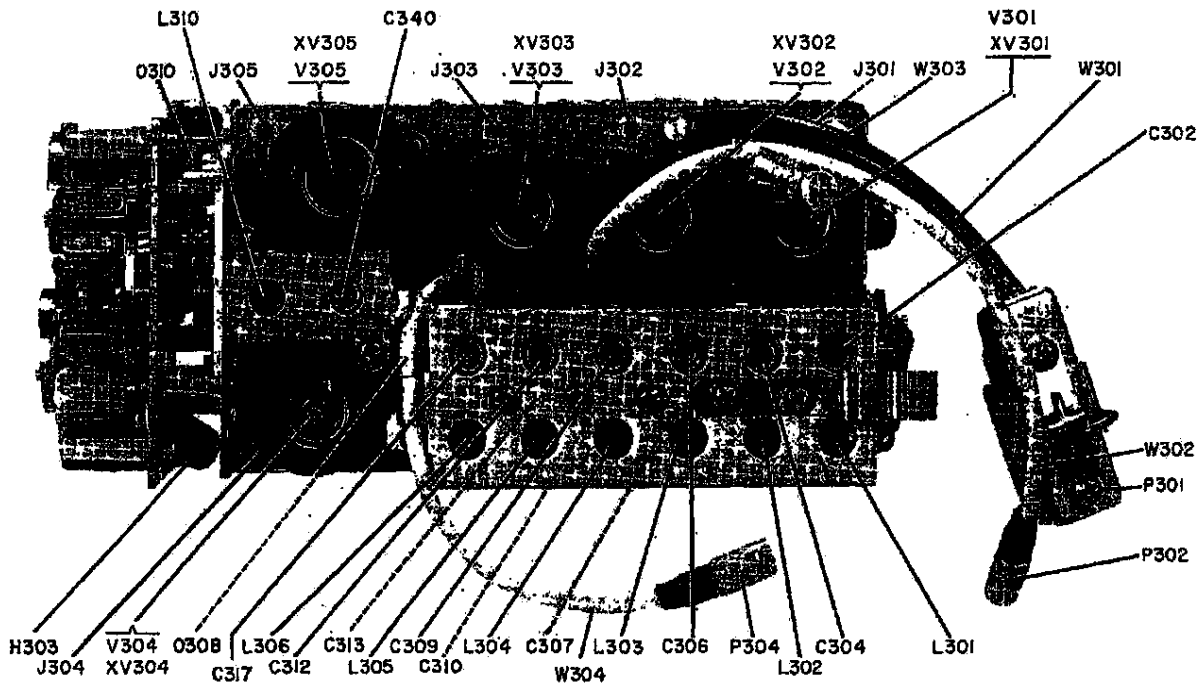


Figure 33. Photograph.

RADIO RECEIVER R-XXX/UHR NAVSHIPS			
INSTALLATION STANDARDS SUMMARY			
Input Voltage _____ Vac		Date _____	
Input Frequency _____ Hz		Serial Number _____	
(When reference standard tests are made)		of Model _____	
		Installed in (ship or station) _____	
		Length of transmission line _____	
Record on this summary sheet the test indications which have been obtained during the installation verification test.			
Paragraph No.	Ref. Std.	Paragraph No.	Ref. Std.
8-10	a. _____ Check	8-48	a. _____ μ V
8-21	a. _____ Vdc		b. _____ μ V
	b. _____ Vdc		c. _____ Check
	c. _____ Vdc		d. _____ μ V
	d. _____ Vdc		e. _____ μ V
			f. _____ μ V
8-33	a. _____ Check	8-51	a. _____ Sec
	b. _____ Check		b. _____ Check
	c. _____ Check		c. _____ Check
	d. _____ Check		d. _____ Hz
			e. _____ Hz
			f. _____ Check
			g. _____ Check

NOTE: This sheet may be reproduced locally to size of manual page.

Figure 34. Installation Standards Summary Sheet.

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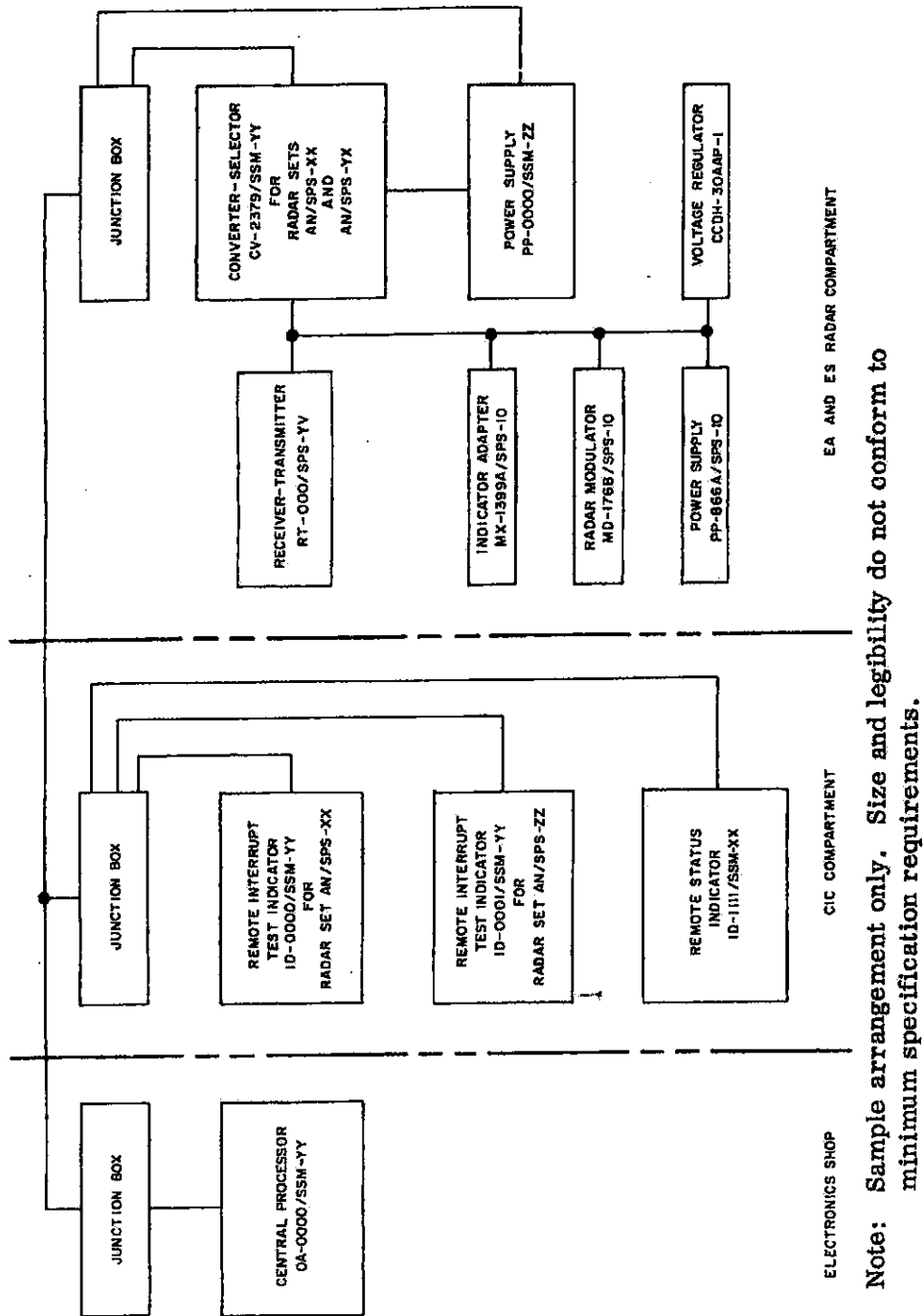
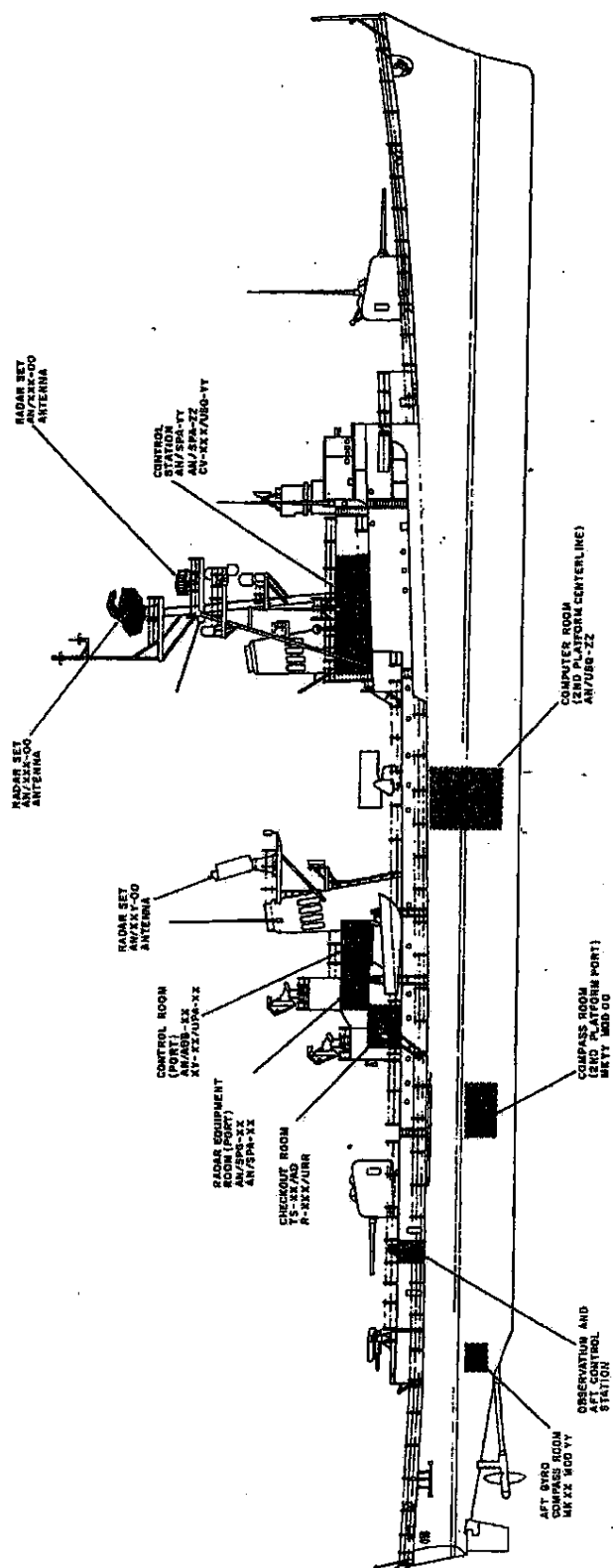


Figure 35. Interrelation of System Equipments.

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Note: Sample arrangement only. Size and legibility do not conform to minimum specification requirements. Supplementary data normally appears on an apron.

Figure 36. System Compartments.

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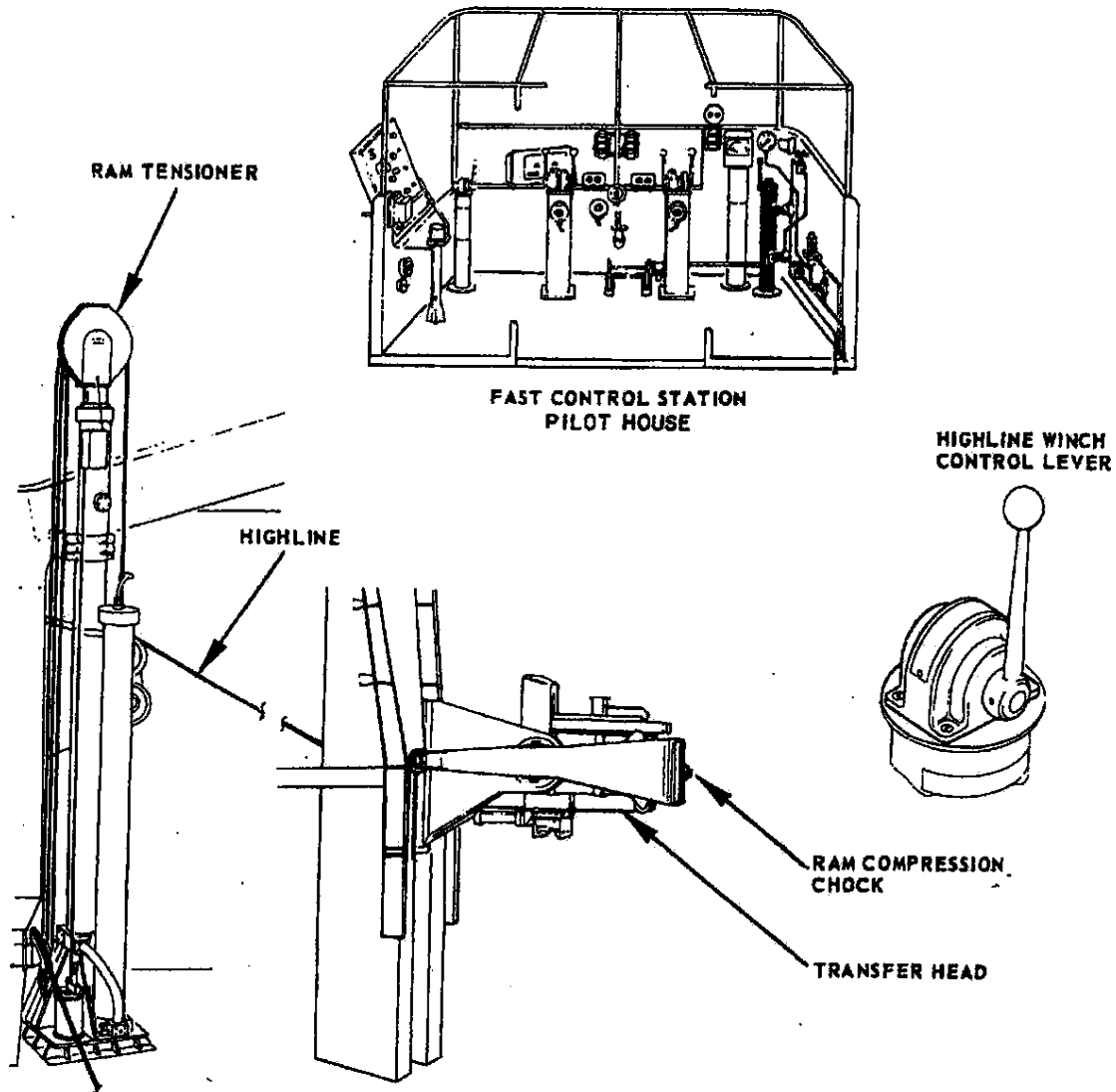


Figure 37. Compartment Area.

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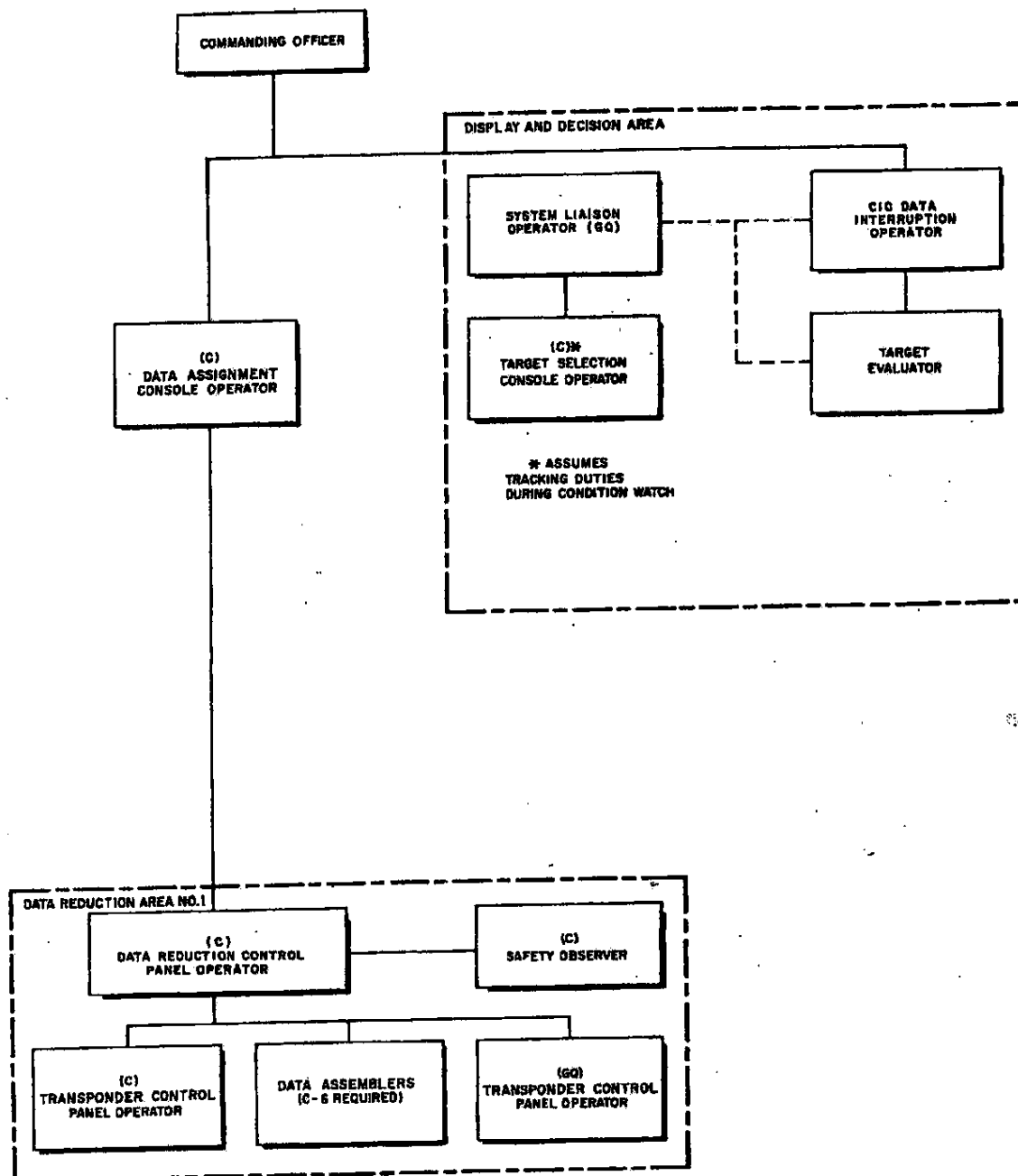


Figure 38. Conditions of Readiness, General Quarters Conditions.

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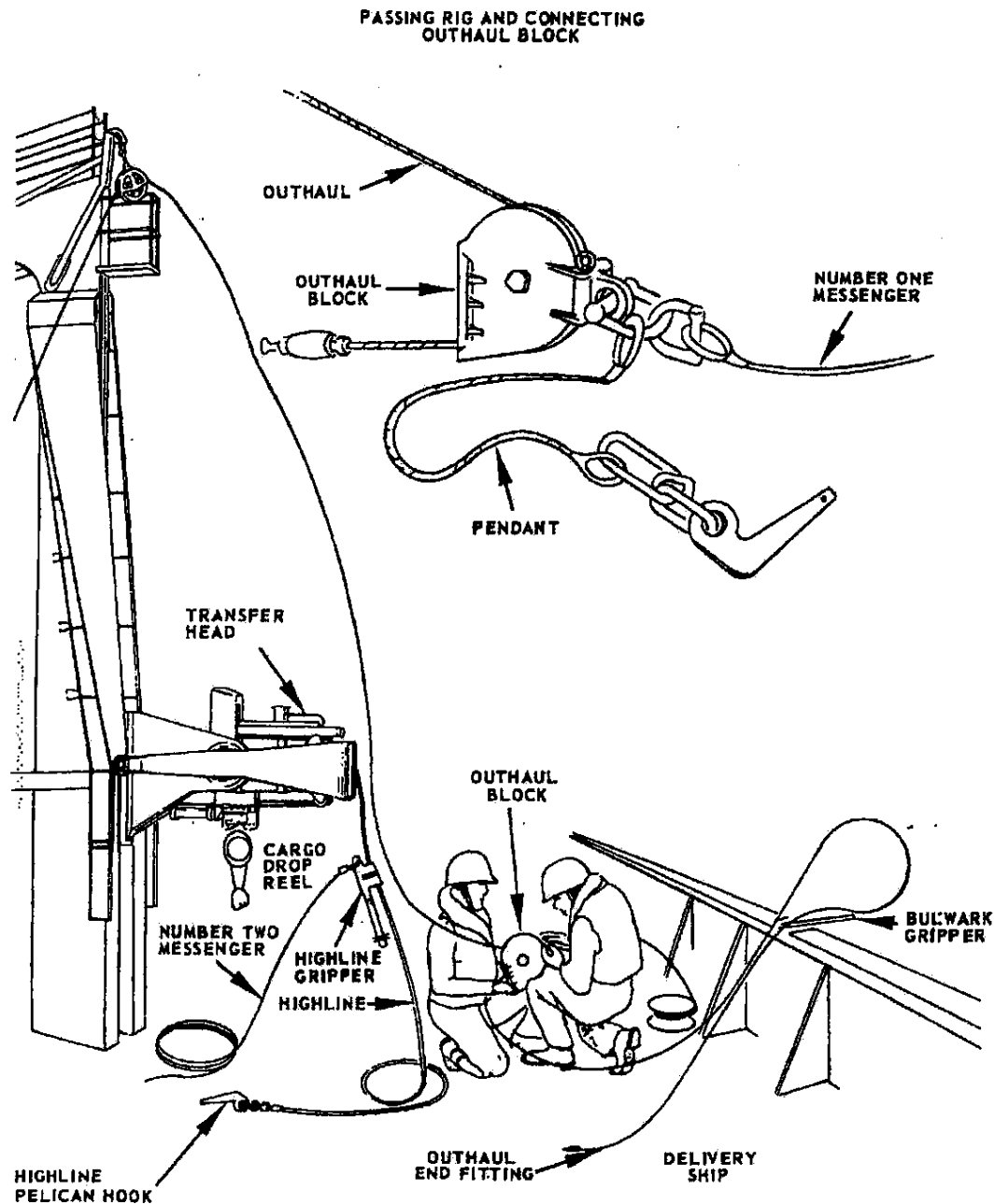


Figure 39. Operational Sequence.

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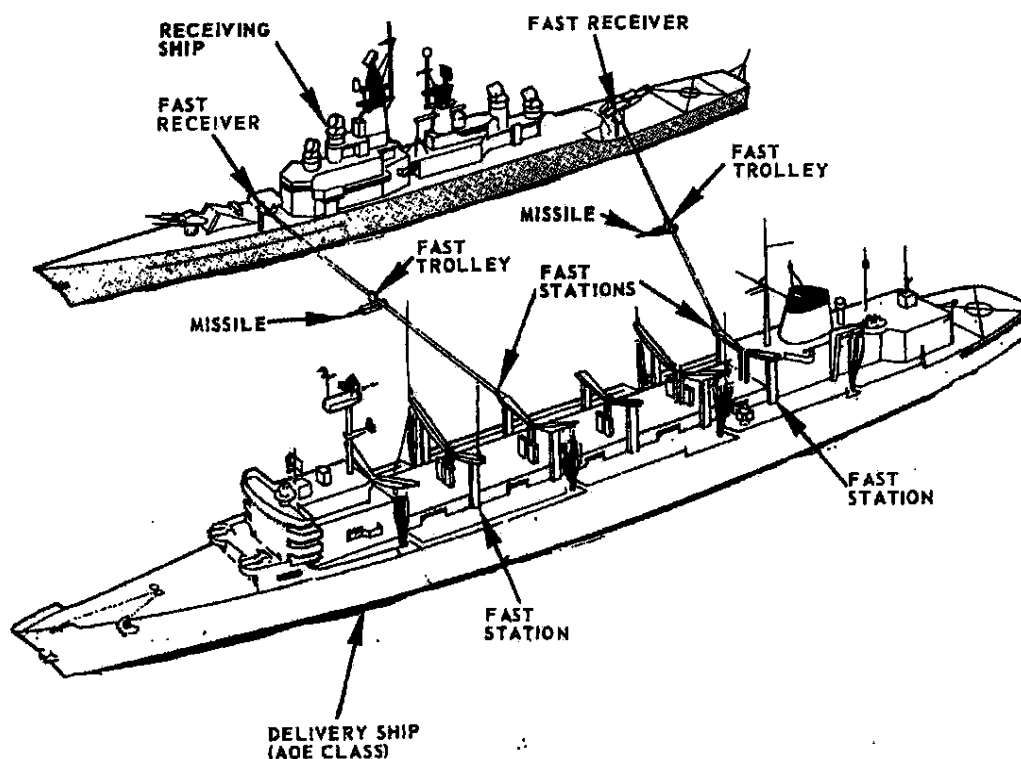


Figure 40. System Illustration Showing Interfaces.

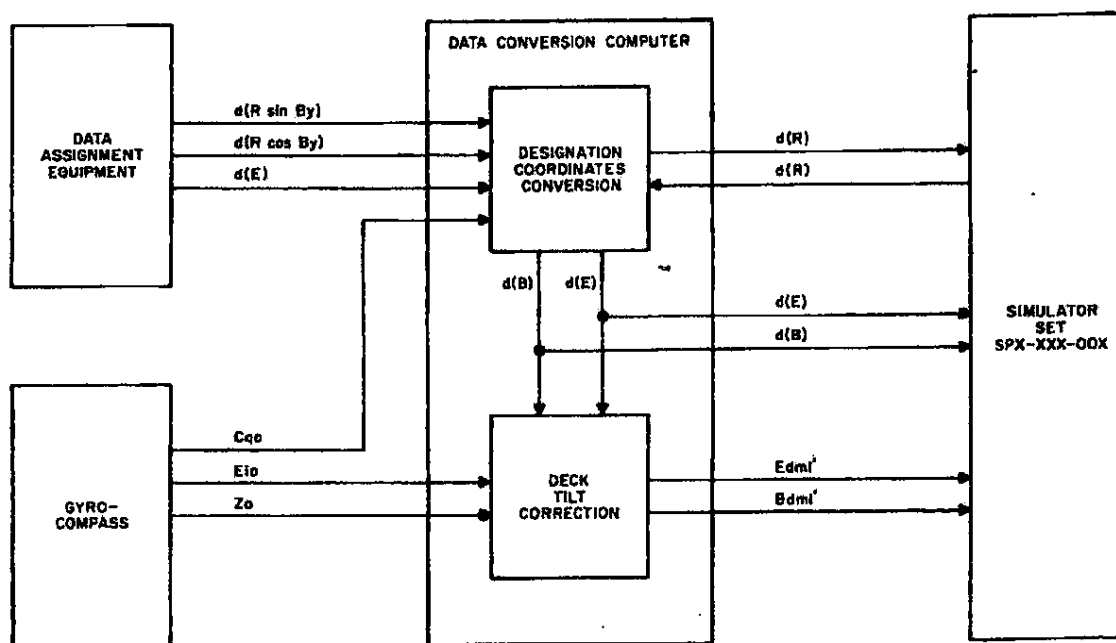
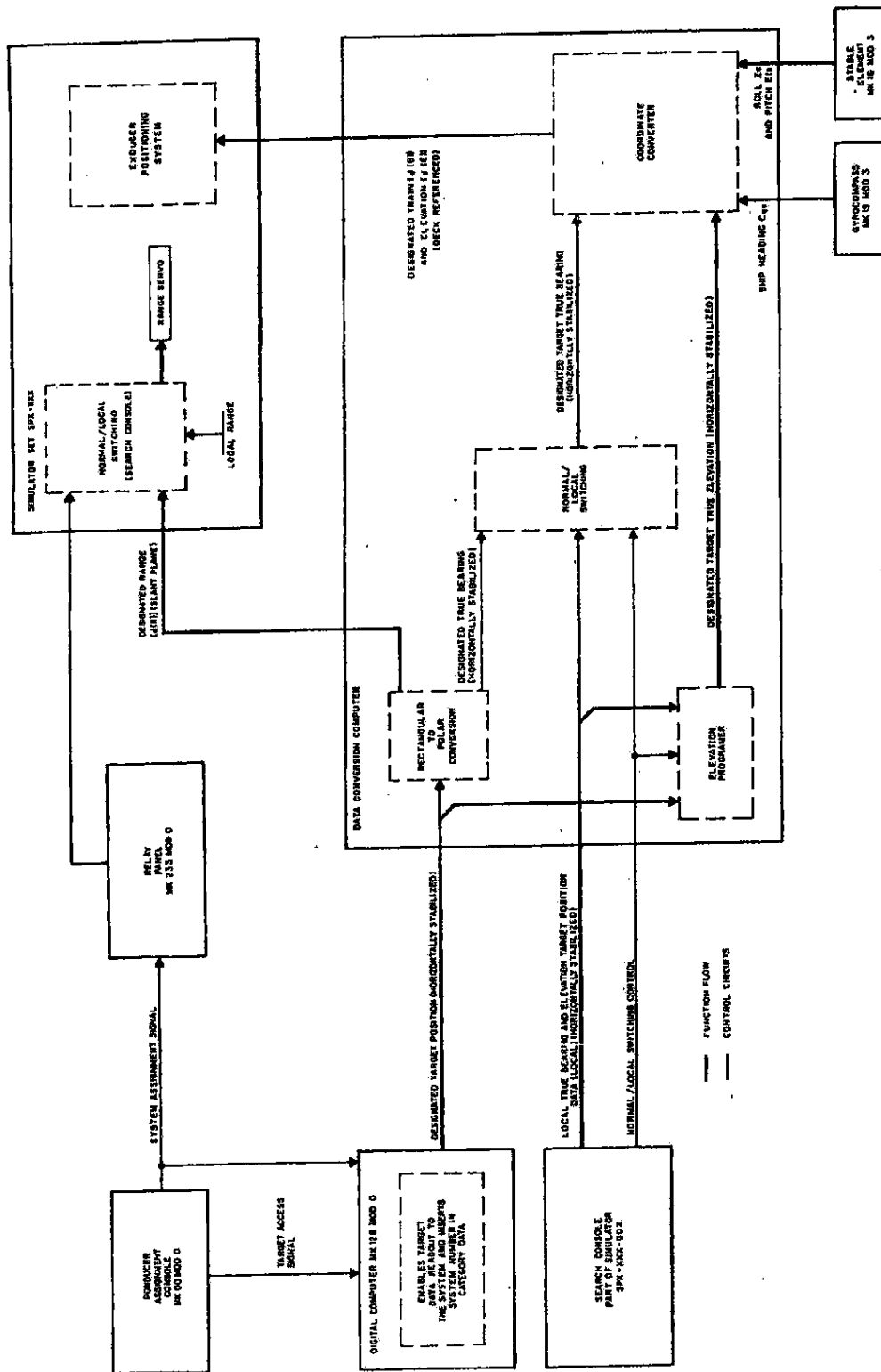


Figure 41. System Functional Block Diagram.

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Note: Sample arrangement only. Size and legibility do not conform to minimum specification requirements.

Figure 42. First Level Functional Description Electronic System.

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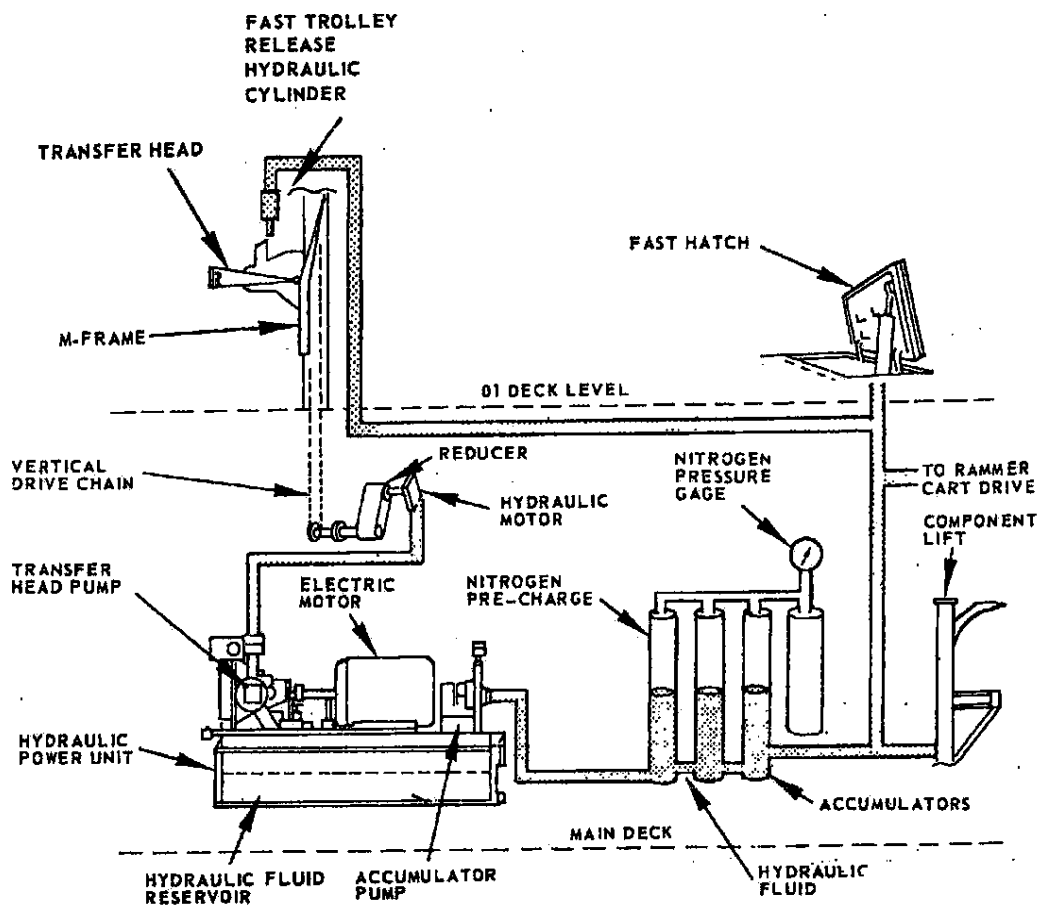


Figure 43. Electrical/Mechanical First Level Functional Description Diagram.

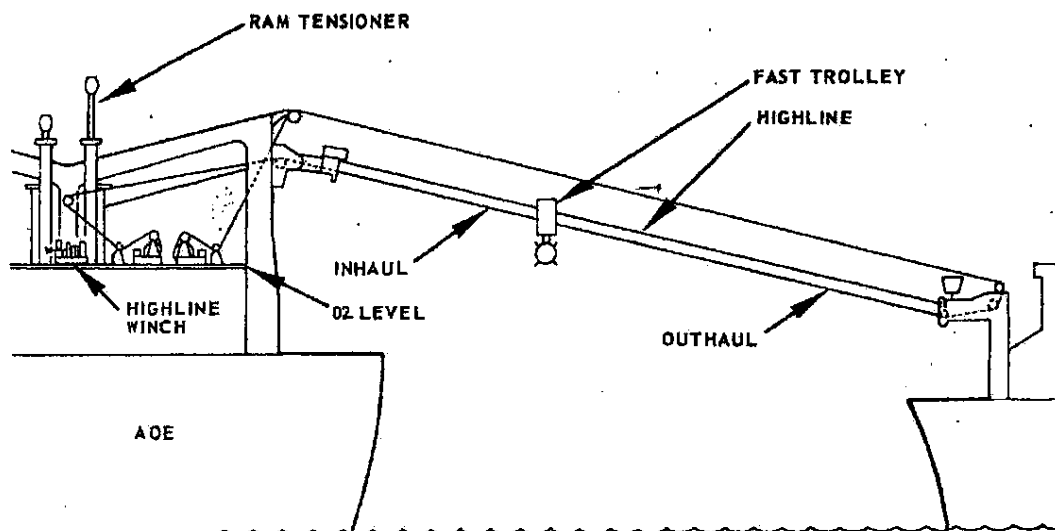


Figure 44. Second Level Functional Description Diagram for Electrical/Mechanical System.

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TABLE ZZ. OPERATION-BASED SYMPTOM FAULT DIRECTORY

Operating Procedure Step	Functional Description	FIP	Alignment Procedure	Fault Isolation Diagrams	Equipment Document
Normal Operating Mode - Paragraph 4- 5					
List the step numbers associated with the fault indications (Example) 4-3. R dial	Noun or Symbolic name of function being monitored dCR	Fault isolation procedure contained in chapter 7 Figure 7-1 Para 7-68	Applicable alignment procedure and paragraph number required to restore normal operation Para - 8-4	List associated fault isolation diagram Figure 7-38 Sheet 2	Reference to applicable equipment technical manual number and other TM reference if available NAVSHIPS 0000 Chapter 4
Next Operating Mode - Paragraph 4- 6					
(CONTINUE INFORMATION AS ABOVE)					

Figure 45. Operation-Based Symptom Fault Directory.

Table ZZ. List of Effective Pages (showing changes)

PAGE NUMBERS	CHANGE IN EFFECT	PAGE NUMBERS	CHANGE IN EFFECT
Title Page	2	3-6B	1
A	2	3-7 & 3-8	Orig
B & C	Orig	4-1 thru 4-4	Orig
i	2	4-4A	2
ii thru vii	Orig	5-1 thru 5-18	Orig
1-0 thru 1-5	Orig	5-18A	1
2-0 thru 2-17	Orig	6-0 thru 6-20	Orig
3-0 thru 3-6	Orig	7-1 thru 7-4	1
3-6A	2	i-1 thru i-3	2

Figure 46. List of Effective Pages.

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Interim Change T-1

NAVSHIPS 0967-173-6011

INSTRUCTION SHEET

Interim Change T-1 to Technical Manual for Teletypewriter
Set AN/UGC-16 NAVSHIPS 0967-173-6011 (formerly NAVSHIPS 94104)

General Instructions:

This interim change revises the manual to reflect the equipment changes made by Field Change 5-AN/UGC-16. When this change is included in the manual, the manual shall cover the equipment as though Field Change 5, NAVSHIPS 0967-173-6050, has been accomplished on the equipment. This change does not supersede any other changes or corrections.

Maintenance support activities shall make this change in the technical manual immediately but shall keep the superseded data intact for support of equipments that have not been modified.

Holders of equipment accompanied by technical manuals shall not make this change in the manual until accomplishment of the field change referenced above.

Insert this interim change in the manual immediately after the front cover preceding the title page, prior changes, or interim corrections in effect.

Specific Instructions:

1. Remove the following pages and insert the corrected T-1 pages:

REMOVE

8-16
8-18

INSERT

8-16 T-1
8-18 T-1

2. Add the following page:

Insert 6-2A between pages 6-2 and 6-3.

DATED: 1 July 1969

UNCLASSIFIED

Figure 47. Sample of an Instruction Sheet to be
Used with Interim (Temporary) and
Permanent Changes.

85

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MIL-M-15071G(NAVY)

CONTRACTOR'S CHECK LIST FOR MANUSCRIPTS OF TECHNICAL MANUALS TYPE II, TYPE IIS, AND TYPE IIX MANUALS			
EQUIPMENT _____	SUBMITTAL DATE _____		
NOMENCLATURE _____	SECURITY CLASSIFICATION _____		
CONTRACT NO _____	NAVSHIPS NO _____		
CONTRACTOR _____	TYPE MANUAL _____		
PRELIMINARY <input type="checkbox"/>	BASIC <input type="checkbox"/>		
PERMANENT CHANGE <input type="checkbox"/>	COMPLETE REVISION <input type="checkbox"/>		
TEMPORARY CHANGE <input type="checkbox"/>	UPDATED REVISION <input type="checkbox"/>		
PUBLICATION SPECIFICATIONS _____			
	YES ()	NO ()	NOT APPL ()
1. The manuscript consists of the following subdivisions in the order indicated:			
Cover	()	()	()
Front Matter	()	()	()
Chapter 1 General Information	()	()	()
Chapter 2 Operation	()	()	()
Chapter 3 Functional Description	()	()	()
Chapter 4 Scheduled Maintenance	()	()	()
Chapter 5 Troubleshooting	()	()	()
Chapter 6 Corrective Maintenance	()	()	()
Chapter 7 Parts List	()	()	()
Chapter 8 Installation	()	()	()
Index	()	()	()
Appendixes, as applicable	()	()	()
User activity comment sheets	()	()	()
2. <u>Front Matter</u>			
Content and format conform	()	()	()
Cover and Title Page	()	()	()
List of Effective Pages	()	()	()
1 (of 5 pages)			

Figure 48. Certification Check-Off List (Types II, IIS, and IIX Manuals)
(Sheet 1 of 5).

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MIL-M-15071G(NAVY)

TYPE II, TYPE IIS, AND TYPE IIX (Cont)			
	YES	NO	NOT APPL
Change Record	()	()	()
Content and Assurance Pages	()	()	()
Table of Contents	()	()	()
List of Illustrations	()	()	()
List of Tables	()	()	()
3. Chapter I - General Information			
Purpose and scope of manual	()	()	()
Meanings of abbreviations and symbols	()	()	()
Warranty/guarantee information	()	()	()
Supersedure data	()	()	()
Interface relationships of technical manual to other publications	()	()	()
Interface relationships of equipments to other equipments	()	()	()
Equipment description	()	()	()
Table defining differences in equipment configuration	()	()	()
Equipment illustration showing relationship of units	()	()	()
Reference data	()	()	()
Tables:	()	()	()
Equipment	()	()	()
Equipment and publications required but not supplied	()	()	()
Field changes and factory changes	()	()	()
Equipment similarities	()	()	()
4. Chapter 2 - Operation			
Introduction description of operator's relationship to equipment	()	()	()
Description of controls, indicators, protective devices, and jacks	()	()	()
Operating procedures:	()	()	()
Operator's turn-on	()	()	()
Modes of operation	()	()	()
Operation under interfering conditions	()	()	()
2 (of 5 pages)			

Figure 48. Certification Check-Off List (Types II, IIS, and IIX Manuals)
(Sheet 2 of 5).

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MIL-M-15071G(NAVY)

TYPE II, TYPE IIS, AND TYPE IIX (Cont)			
	<u>YES</u>	<u>NO</u>	<u>NOT APPL</u>
Emergency operation and turn-off	()	()	()
Safety requirements	()	()	()
Operating checks and adjustments	()	()	()
5. Chapter 3 - Functional Description			
Detailed analysis of details of operation	()	()	()
Development of equipment outputs in each mode of operation	()	()	()
Level 1 (over-all) description including over-all block diagram	()	()	()
Level 2 (major functional level) including functional block diagram for each equipment output	()	()	()
Level 3 (circuit level) including simplified schematic diagrams and detailed descriptions not covered in Handbook of Electronic Circuits	()	()	()
6. Chapter 4 - Scheduled Maintenance			
Introduction	()	()	()
Scheduled maintenance statement	()	()	()
Scheduled maintenance action index	()	()	()
Preventive maintenance procedures	()	()	()
Performance tests	()	()	()
7. Chapter 5 - Troubleshooting			
Introduction	()	()	()
Relay, lamp, and protective device indexes	()	()	()
Maintenance turn-on procedure	()	()	()
Reference to troubleshooting procedures	()	()	()
Troubleshooting procedures	()	()	()
Signal flow diagrams	()	()	()
Control diagrams	()	()	()
Distribution diagrams	()	()	()
Maintenance schematic diagrams:			
Zones	()	()	()
Zoning	()	()	()

3 (of 5 pages)

Figure 48. Certification Check-Off List (Types II, IIS, and IIX Manuals)
(Sheet 3 of 5).

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MIL-M-15071G(NAVY)

TYPE II, TYPE IIS, AND TYPE IIX (Cont)			
	YES	NO	NOT APPL
Major and minor signal paths	()	()	()
Significant voltages	()	()	()
Functional names of controls	()	()	()
Source and destination of all circuits identified	()	()	()
Current and voltage values of power transformers	()	()	()
Resistance and voltage charts on aprons	()	()	()
Logic, timing circuit, and control cycle diagrams for digital devices	()	()	()
Module logic diagrams, flow charts, coding instruction sheets, and test programs	()	()	()
Troubleshooting dependency diagrams	()	()	()
8. <u>Chapter 6 - Corrective Maintenance</u>			
Introduction	()	()	()
Adjustments and alignment section	()	()	()
Repair section	()	()	()
9. <u>Chapter 7 - Parts List</u>			
Introduction	()	()	()
List of major units	()	()	()
Parts list:	()	()	()
Parts, descriptions (Type II only) with reference to parts location diagrams	()	()	()
Parts divided by units in alpha-numerical order	()	()	()
List of attaching hardware	()	()	()
List of manufacturers	()	()	()
Parts location illustrations for all parts	()	()	()
10. <u>Chapter 8 - Installation</u>			
Mounting dimension diagrams	()	()	()
Interconnecting wiring and cable	()	()	()
Site selection data	()	()	()
List of referenced publications	()	()	()
Tools and material	()	()	()
Unpacking and repacking	()	()	()

4 (of 5 pages)

Figure 48. Certification Check-Off List (Types II, IIS, and IIX Manuals)
(Sheet 4 of 5).

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MIL-M-15071G(NAVY)

TYPE II, TYPE IIS, AND TYPE IIX (Cont)			
	<u>YES</u>	<u>NO</u>	<u>NOT APPL</u>
Preparation of foundations	()	()	()
Input requirements	()	()	()
Installation procedures	()	()	()
Installation checkout:	()	()	()
Phase 1, Installation inspection and pre-energizing procedures	()	()	()
Phase 2, Turn-on and preliminary tests	()	()	()
Phase 3, Installation verification test	()	()	()
Test procedures	()	()	()
Installation standard summary sheet	()	()	()
11. <u>General Requirements</u>			
Information accurately covers all variations of equipment identified by the same nomenclature	()	()	()
Consistent use of terminology through book	()	()	()
Sufficient notes, cautions, and warnings	()	()	()
Security classification of sections conform	()	()	()
<p>I certify that the manuscript conforms to the statements as checked above, and meets the requirements of the specification.</p> <p style="text-align: right;">_____ Head of Publications Department</p> <p style="text-align: right;">_____ Head of Technical Engineering Group</p>			
5 (of 5 pages)			

Figure 48. Certification Check-Off List (Types II, IIS, and IIX Manuals)
(Sheet 5 of 5).

9999906 2100099 522

MIL-M-15071G(NAVY)

INDEX

	<u>Paragraph</u>	<u>Page</u>
Abbreviations	3.7.1	30
Accessibility	3.5.6.5.1	10
Accessibility and referencing	3.3.1	3
Accessories	3.5.3.5	5
Active systems test	3.6.10.6	29
Adjustments	3.5.8.2	16
Alignment	3.5.8, 3.5.8.2, 3.6.1, 3.6.8.1, 3.6.9	16, 22, 27, 28
Allowance parts list	3.5.10.9.1	20
Alphabetical index	3.4.5	4
Analysis	3.5.5.2, 3.5.6.5.1	7, 10
Appendices	3.4.4	4
Applicability	3.5.1	4
Applicability of manuals	3.9	32
Applicable documents	2	1
Approval	3.11	34
Approval and procurement page	3.4.2.1.4	4
Apron notes	3.7.5.3	31
Associated system equipment	3.6.2.4	22
Automatic downgrading	3.2.2	2
Basic manual	3.4.1.1, 3.4.3.1, 3.11.3	3, 4, 35
Basic safety concepts	3.6.3.1	23
Battle short operation	3.5.4.3	6
Between diagrams	3.7.4.1	30
Binding	3.8.5, 3.8.6.5, 3.10.3, 3.13.8	32, 34, 37
Block diagram	3.5.5.2.1	7
Book plan	1.3, 3.13.1, 3.14	1, 36, 37
Bulk shipment	5.1.3	40
Cable run diagrams	3.6.10.3	28
Cabling diagrams	3.6.10.7	29
Calibration	3.5.6.5.6	11
Capabilities	3.5.3.4, 3.6.2.5	5, 23
Categories	3.5.3.6	5
Cautions	3.5.4.3.1	6
Certification check-off list	3.11.3.1	35
Changes	3.5.3.7, 3.10	6, 32
Approval date	3.10.3	34
Change approval	3.11.3	35
Change numbers	3.10.1.1, 3.10.3	33, 34
Cover	3.10.3	34
Date of change	3.10.3	34
Distribution	3.10.2, 3.12.2	33, 36
Field change	3.5.3.7	6
Identification	3.10.2	33
Interim	1.3, 3.10.2	1, 33
Issue information	3.10.1.4	33
List of effective pages	3.10.3	34
List of illustrations	3.10.3	34
List of tables	3.10.3	34
Manual	3.4.3	4
Method	3.10.1.2	33
Numbering of	3.10.2, 3.10.3, 3.11.1	33, 34, 35
Parts list	3.10.3	34
Permanent	1.3, 3.10.1.5, 3.10.3	1, 33, 34
Production of	3.10.1.5	33
Quantity	3.10.2	33
Record of	3.4.2.1.3	4
Responsibility for	3.10.1, 3.10.3	33, 34
Revised pages	3.10.2	33
Security note	3.10.2	33
Superseded notice	3.10.2, 3.10.4	33, 34
Superseded pages	3.10.2	33
Temporary	3.10.2	33
Title page	3.10.3	34

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MIL-M-15071G(NAVY)

	<u>Paragraph</u>	<u>Page</u>
Charts:		
Dependency matrix	3.5.7.2.12, 3.5.7.2.12.3	15, 16
Flow	3.5.7.2.10	15
Matrix	3.5.7.2.12.3	16
Troubleshooting	3.5.7, 3.5.7.2.1	11, 12
Check-off list	3.11.3.1	35
CID number	3.5.3.5, 3.5.9.2.1, 6.5.1.1	5, 17, 42
Circuit description	3.5.5.2	7
Circuit diagram	3.5.5.2	7
Circuit levels	3.5.5.2	7
Classified manuals	3.8.4, 3.8.6.5	32
Classification	1.2, 3.2	1, 2
Cleaning solvents	3.5.6.3	9
Coding instruction sheets	3.5.7.2.11	15
Colors for classification	3.8.4	32
Colors for covers	3.8.4	32
Column headings	3.6.8.1	27
Comment sheets	3.4.6	4
Commercial manuals	3.4.1.3, 3.4.3.3	3, 4
Complementary manual	6.5.16	43
Component	6.5.1	42
Conditions coverage	3.6.4.1	24
Conditions of readiness	3.6.1, 3.6.4, 3.6.4.1	22, 24
Contents	3.4.2, 3.5.3.6, 3.6	3, 5, 22
Content requirements	3.5.11.1	21
Contents, table of	3.4.2.1, 3.4.2.1.6	3, 4
Control cycle diagrams	3.5.7.2.7	15
Control diagrams	3.5.7.2.3.3, 3.6.8.4	13, 28
Controls and indicators	3.5.4.2, 3.5.4.3.1	6
Control panel markings	3.8.2	31
Corrective maintenance	3.5.8, 3.7.2	16, 30
Cover	3.4.2.1, 3.10.3	3, 34
Cover colors	3.8.4	32
Cover stock	3.8.4, 3.8.6.4	32
Criteria for illustrations	3.5.9.7.1	19
Criteria installation data	3.5.10.9.3.2	21
Critical inspection	3.5.6.5.6	11
Critical operation	3.5.6.5.6	11
Cycle diagram	3.5.7.2.7	15
 Data classification	 3.2.1	 2
Data function diagrams	3.6.8.5	28
Data items	1.3	1
Date of change	3.10.3	34
Definitions	6.5	42
Deliverable items	1.3, 3.13, 6.2	1, 36, 41
Dependency diagram	3.5.7.2.12	15
Dependency matrix chart	3.5.7.2.12.3	16
Designation, reference	3.5.9.2.2, 3.5.9.3.2.1, 3.7.1	17, 18, 30
Designators	3.8.2	31
Description	3.5.3.2, 3.5.3.7, 3.5.5.1, 3.5.9.3.2.1, 3.6.6.6	5, 6, 7 18, 26
Detailed analysis	3.5.5.2	7
Detailed requirements	3.5.6.5.2	10
Diagrams	3.5.5.2.1, 3.5.7.2.3.2	7, 13
Apron notes	3.7.5.3	31
Block	3.5.5.2.1	7
Cable run	3.6.10.3	28
Cabling	3.6.10.7	29
Circuit	3.5.5.2	7
Control	3.5.7.2.3.3, 3.5.7.2.7, 3.6.8.4	13, 15, 28
Cycle	3.5.7.2.7	15
Data functional	3.6.8.5	28
Dependency	3.5.7.2.12	15
Fault isolation	3.6.8.1, 3.6.8.2	27

9999906 2100101 TOO

MIL-M-15071G(NAVY)

	<u>Paragraph</u>	<u>Page</u>
Diagrams (continued)		
Fault logic	3.5.7.2.12.2	16
Flow charts	3.5.7.2.10	15
Functional	3.5.5.2, 3.5.5.2.2, 3.5.5.2.5, 3.7.5.1	7, 8 31
Functional dependency	3.7.5.1	31
General notes	3.7.5.1	31
Interconnecting wiring	3.6.10.7	29
Interconnection	3.6.10.2	28
Logic	3.5.7.2.5, 3.5.7.2.9, 3.5.7.2.12.2	15, 16
Maintenance	3.5.7.2.4	14
Matrix	3.6.8	27
Mechanical schematic	3.5.5.2.5	8
Multiple sheet	3.7.5.2	31
Notes	3.7.5	31
Other diagrams	3.5.7.2.12	15
Pictorial	3.6.10.7	29
Piping	3.5.5.2.4, 3.5.7.2.3.2, 3.6.10.7	8, 13, 29
Power distribution	3.5.7.2.3.4	13
Schematic	3.5.5.2.5, 3.5.7.2.4	8, 14
Signal flow	3.5.7.2.3.1	12
Simplified	3.5.5.1, 3.5.5.2.3	7, 8
Single function	3.5.7.2.8	15
System cable interconnection	3.6.10.5	28
System piping	3.6.10.4	28
Timing circuits	3.5.7.2.6	15
Titles of	3.5.7.2.3.1	12
Troubleshooting	3.5.7.2.12	15
Wiring	3.6.10.7	29
Zoning	3.7.4.5, 3.7.4.6	31
Digital equipment	3.5.5.2.6	8
Distribution statement	3.7.3, 6.2.1	30, 42
Documents	3.5.3.5	5
Drawings	3.6.10.7	29
Exploded views	3.5.9.7.2	19
Installation	3.5.10, 3.5.10.1	19
Line drawings	3.5.9.7.3	19
Duplication	3.8.6.1	32
Electrical control circuits	3.5.7.2.3.3	13
Electrical mechanical description	3.5.5.1	7
Electromagnetic radiation hazards	3.6.3.2	23
Emergency conditions	3.6.4.1.3	24
Emergency operation	3.5.4.3, 3.6.5.2.2	6, 25
Emergency turn-off	3.5.4.3	6
Engineering analysis	3.5.6.5.1	10
Environmental characteristics	3.5.3.4	5
Equipment	6.5.2	42
Accessories	3.5.3.5	5
Description	3.5.3.2	5
Document	3.6.8.1	27
Manuals	3.5	4
Parts list	3.5.9, 3.7.2, 3.10.3	17, 30, 34
Publications	3.5.3.5, 3.5.3.6	5
Test	3.5.3.5, 3.5.3.6, 3.6.2.5	5, 23
Turn-off	3.5.4.3	6
Experimental equipment	1.2, 3.5.11.2, 3.8.6	1, 21, 32
Exploded views	3.5.9.7.2	19
Factory changes	3.5.3.7	6
Fault directory	3.6.8	27
Fault isolation diagrams	3.6.8, 3.6.8.1	27
Fault logic diagrams	3.5.7.2.12.2	16
Field changes	3.5.3.7	6
Figure and index numbers	3.5.9.3.1	17

■ 9999906 2100102 947 ■

MIL-M-15071G (NAVY)

	<u>Paragraph</u>	<u>Page</u>
Final manual	1.3, 6.5.3	1, 42
First level functional description	3.6.6.5	26
Flow charts	3.5.7.2.10	15
Foldouts	3.7.5.3, 3.8.3	31, 32
Format	3.5.6.5.7, 3.7, 3.7.1, 3.7.2	11, 30
Front matter	3.4.2, 3.4.2.1	3
Function	6.5.4	42
Function directory	3.6.6.3	25
Functional characteristics	3.5.3.4	5
Functional dependency	3.5.7.2.12.1	15
Functional description	3.5.5, 3.5.5.1, 3.5.5.2.1, 3.6.1	7, 22
Functional diagrams	3.5.5.2, 3.5.5.2.2, 3.5.5.2.5, 3.7.5.1	7, 8, 31
Functional level	3.5.5.2	7
General information	3.5.2, 3.5.3, 3.6.1, 3.6.2	4, 22
General notes	3.7.5.1	31
General quarters	3.6.4.1.2	24
General requirements	3.7.1	30
Government inspection	4.2.1	38
Government verification	4.2.1	38
Graphic symbols	3.7.1	30
Hazardous components	3.6.3.4.3	24
Hazards	3.6.3.2, 3.6.3.3, 3.6.3.4	23
Horizontal folds	3.8.6.2	32
Identical manuals (types II and III)	3.9.1	32
Identical modified manuals	3.9.2, 4.2.3	32, 40
Identification	3.5.3.4	5
Illustrations	3.5.3.3, 3.5.4.3.1, 3.5.9.7, 3.5.9.7.1, 3.6.2.3, 3.6.2.4, 3.6.3.2, 3.6.5, 3.8.2, 3.8.6.3	5, 6, 19, 22, 23, 24, 31, 32
Criteria	3.5.9.7.1	19
Parts identification	3.5.9.1	17
Image area	3.7.5.3	31
Index	3.4.5	4
Indicators	3.5.4.2	6
Individual manuals	5.1.1	40
Industrial security manual	3.2	2
Initial quality planning	4.2.1	38
Initial turn-on	3.5.10.9.2, 3.6.10.10	21, 29
Input requirements	3.5.10.7	20
Inspection	3.5.10.9.1, 3.6.10.9, 4.1, 6.4.2	20, 29, 37, 42
Inspection manual	4.2.1	38
Inspection of preparation for delivery	4.5	40
Installation	3.5.10.8	20
Checkout	3.5.10.9, 3.5.10.9.1, 3.6.10.8	20, 29
Data	3.6.1, 3.6.10	22, 28
Drawings	3.5.10.1, 3.5.10.5, 3.5.10.6, 3.6.10.7.1	19, 20, 29
Inspection	3.5.6.5.6, 3.5.10.5, 3.5.10.6	11, 20
Materials	3.5.10.4, 3.5.10.9.1	20
Procedures	3.5.10.8, 3.5.10.9.3.1	20, 21
Standard summary	3.5.10.9.3.2, 3.6.10.11.2	21, 30
Tools	3.5.10.4	20
Verification tests	3.5.10.9.3, 3.6.10.8, 3.6.10.11	21, 29
Instruction sheets	3.5.7.2.11, 3.10.2, 3.10.3	15, 33, 34
Integrated circuits	3.5.5.2.3.1	8
Intended use	6.1	41
Interconnection diagrams	3.6.10.2	28
Interface	3.5.3.1	5

■ 9999906 2100103 883 ■

MIL-M-15071G(NAVY)

	<u>Paragraph</u>	<u>Page</u>
Interim changes (temporary)	3.10.2, 6.5.5	33, 42
Distribution	3.10.2, 3.12.2	33, 36
Identification	3.10.2	33
Instruction sheet	3.10.1.3, 3.10.2	33
List of effective pages	3.10.2	33
Location of	3.10.2	33
Numbering of	3.10.2	33
Quantity	3.10.2, 3.12.2	33, 36
Responsibility for	3.10.1	33
Superseding	3.10.2	33
Temporary	3.10.2, 6.5.5	33, 42
Title page	3.10.2	33
Interior communication equipment	3.6.4.1, 6.5.6	24, 42
Interrelation of system equipment	3.6.2.1	22
Introduction	3.5.3.1, 3.5.4.1, 3.5.6.1, 3.5.7.2.1, 3.5.8.1, 3.5.9.1, 3.6.2.1, 3.6.3.1, 3.6.6.2, 3.6.7.1	5, 6, 9, 12, 16, 17, 22, 23, 25, 26
Issues	3.4.1	3
Issue information	3.10.1.4	33
Item description	3.5.9.3.2.1, 3.5.9.4	18
Item name	3.5.3.5	5
Lamp indexes	3.5.7.2.1.2	12
Layout	3.8.6.2	32
Lettering	3.8.2	31
Levels, circuit	3.5.5.2	7
Levels, functional	3.5.5.2	7
Levels of writing	3.3	2
Limitations	3.5.3.4	5
Line artwork	3.8.2	31
Line drawings	3.5.9.7.3	19
List of:		
Attaching hardware	3.5.9.5	19
Common item descriptions	3.5.9.4	18
Effective pages	3.4.2, 3.4.2.1.2, 3.10.1.2, 3.10.2, 3.10.3	3, 33, 34
Equipment	3.5.3.5, 3.5.3.6	5
Illustrations	3.4.2.1, 3.4.2.1.6, 3.10.2, 3.10.3	3, 4, 33, 34
Item description	3.5.9.3.2, 3.5.9.4	18
Major units or components	3.5.9.2.1, 3.5.9.2.2	17
Manufacturers	3.5.9.6	19
Parts	3.5.9, 3.5.9.3, 3.5.9.3.1	17
Parts location	3.5.9.7	19
Tables	3.4.2.1, 3.4.2.1.6	3, 4
Utilities	3.6.10.1	28
Location of interim change	3.10.2	28
Logic diagrams	3.5.7.2.5	15
Logic principles	3.5.5.2.6.1	8
Lubricants	3.5.6.3	9
Lubrication parts	3.5.6.3	9
Maintenance	3.5.8	16
Maintenance action index	3.5.6.2, 3.6.7.2	9, 26
Maintenance engineering analysis	3.5.6.5.1, 3.13.1	10, 36
Maintenance and overhaul procedures	3.5.6.5, 3.5.6.5.6	10, 11
Maintenance, preventive	3.5.6.1, 3.5.6.3	9
Maintenance safety summary	3.6.3.4.2	24
Maintenance, scheduled	3.5.6, 3.6.1, 3.6.7	9, 22, 26
Maintenance schematic diagram	3.5.7.2.4	14
Maintenance turn-on procedures	3.5.7.2.1.4	12
Major components	3.5.9.2	17
Major parts	3.5.5.1	7
Major units	3.5.9.2	17
Manuals, types of:		
Commercial	3.4.1.3, 3.4.3.3	3, 4
Final	6.5.3	42

■ 9999906 2100104 71T ■

MIL-M-15071G(NAVY)

	<u>Paragraph</u>	<u>Page</u>
Manuals, types of: (continued)		
Manuscript of	3.11.3, 3.13, 5.1.4	35, 36, 40
Modified.	3.9.2, 4.2.3	32, 40
Multivolume	5.1.1	40
Outline (book plan)	3.13.1	36
Supplement.	3.4.1.4, 3.4.3.4	3, 4
System.	3.6	22
Manual inspection	4.2.1	38
Manual modifications.	3.9.2	32
Manual validation	4.2.1	38
Manual verification	4.2.1	38
Manufacturer's list	3.5.9.6	19
Manuscripts	1.3, 3.11.3, 3.13, 3.13.4,	1, 35, 36,
	5.1.4	40
Manuscript illustrations.	3.11.3, 3.13.4	35, 36
Manuscript review	3.11.3, 3.13.4, 5.1.4	35, 36, 40
Manuscript validation	4.2.1	38
Marking	5.2	41
Materials	3.5.10.4	20
Matrix chart.	3.5.7.2.12.3	16
Matrix diagrams	3.6.8, 3.6.8.3	27
Mechanical equipment.	6.5.2	42
Mechanical schematic diagram.	3.5.5.2.5	8
Method (changes)	3.10.1.1	33
Methods of presentation	3.5.4.3.1, 3.5.5.2.6.1,	6, 8, 25
	3.6.6.1	
Microfilming.	3.8.1, 3.8.2	31
Micro-miniature capsules.	3.5.5.2.3.1	8
Modes of operation.	3.5.4.2, 3.5.10.9.3	6, 21
Modified manuals.	3.9.2, 4.2.3	32, 40
Module logic diagrams	3.5.7.2.9	15
Mounting dimension data	3.6.10.7	29
Multiple sheet diagram.	3.7.5.2	31
Multunit equipment	3.5.5.2.1	7
Multivolume manuals	5.1.1	40
Name of unit.	3.5.9.2.1, 3.5.9.2.2	17
Negatives	3.13.7	37
Noise reduction	3.5.6.3	9
Nomenclature.	3.5.3.5, 3.5.3.7, 3.5.5.2.5	5, 6, 8,
	3.5.9.2.2, 3.6.2.5	17, 23
Nonstandard test equipment.	3.5.3.6	5
Normal operation.	3.6.5.2.1	25
Notes	3.5.9.3.1, 3.7.5, 3.7.5.1, 6	17, 31, 41
Notes, apron.	3.7.5.3	31
Notes on diagrams	3.7.5	31
Notes, general.	3.7.5.1	31
Notes, specific	3.7.5.2	31
Numbering:		
Changes	3.10.1.5, 3.10.2, 3.10.3,	33, 34,
	3.11.1	35
Interim (temporary)	3.10.2	33
Publication	3.11.1	35
Omission of data	3.14	37
Operating modes	3.6.5.2	25
Operating procedural steps.	3.6.8.1	27
Operation	3.5.2, 3.5.4, 3.5.4.3,	4, 6, 7,
	3.5.5.2, 3.6.1, 3.6.5	22, 24
Operation-based symptom fault directory	3.6.8.1	27
Operation, emergency.	3.6.5.2.2	25
Operation fault directory	3.6.8.1	27
Operation, normal	3.6.5.2.1	25
Operation procedures.	3.5.4.3, 3.5.4.3.1	6
Operation, special.	3.6.5.2.3	25
Operation, test	3.6.5.2.3	25
Operational safety summary.	3.6.3.4.1	24

9999906 2100105 656

MIL-M-15071G(NAVY)

	<u>Paragraph</u>	<u>Page</u>
Operational sequence	3.5.4.3	6
Operator turn-on	3.5.4.3	6
Operation turn-off	3.5.4.3	6
Ordering data	6.2	41
Organization	4.2.1	38
Other diagrams	3.5.7.2.12	15
Other publications	2.2	2
Outline (book plan)	3.13.1	36
Output equipment	3.5.5.2.1	7
Overall block diagram	3.5.5.2.1	7
Overall dimensions	3.5.3.5	5
Overhaul, maintenance, and repair standards	3.5.6.5, 3.5.6.5.2, 3.5.6.5.6, 3.5.6.5.7	10, 11
Packaging	5.1	40
Packing	3.5.10.5, 5.1	20, 40
Page numbers	3.5.9.2.1, 3.5.9.2.2	17
Page text	3.8.3	32
Paper stock	3.8.3, 3.8.6.4	32
Paragraph references	3.7.4.4	31
Parameters, test	3.5.3.6	5
Parameters and tolerances	3.5.10.7	20
Parts	6.5.8	42
Parts availability	3.5.6.5.5	11
Parts location	3.5.9.7	19
Parts list	3.5.9, 3.5.9.3, 3.5.9.3.1, 3.5.9.3.2, 3.7.2, 3.10.3	17, 18, 30, 34
Parts symbols	3.8.2	31
Performance tests	3.5.6.2, 3.5.6.4	9, 10
Periodicity	3.5.6.2, 3.6.7.2	9, 26
Permanent changes	3.10.3	34
Phases 1, 2, 3	3.5.10.9.1, 3.5.10.9.2, 3.5.10.9.3, 3.6.10.9, 3.6.10.10, 3.6.10.11	20, 21, 29
Photographs	3.5.9.7.3	19
Photolithographic negatives	1.3, 3.13.7, 3.14, 5.1.6	1, 37, 41
Physical arrangement	3.6.2.2	22
Physical description	3.5.3.2	5
Pictorial diagrams	3.6.10.7	29
Piping diagrams	3.5.5.2.4, 3.5.7.2.3.2, 3.6.10.7	8, 13, 29
Planned maintenance system	3.5.6.1, 6.5.9	9, 42
Planning, inspections, and review	6.4, 6.4.1, 6.4.2, 6.4.3	42
Power distribution diagrams	3.5.7.2.3.4	13
Precautions	3.6.3.2, 3.6.3.3, 3.6.3.4	23
Precedence	3.1	2
Pre-energizing procedures	3.6.10.9	29
Preliminary manual	1.3, 3.4.1.2, 3.4.3.2, 3.8.6, 3.11.2, 3.12.1, 3.13, 3.13.5, 4.2.1, 6.5.10, 6.5.10.1, 6.5.10.2	1, 3, 4, 32, 35, 36, 37, 38, 42, 43
Preliminary manual approval	3.11, 3.11.2	34, 35
Preliminary manual review	3.11.2.1, 3.13.3	35, 36
Preliminary test	3.5.10.9.2, 3.6.10.10	21, 29
Preoperational conditions	3.6.5.1	24
Preparation for delivery	5	40
Preparation of foundations	3.5.10.6	20
Preventive maintenance procedures	3.5.6.1, 3.5.6.3	9
Primary power distribution	3.6.10.7	29
Printed manuals	1.3	1
Printing	3.13.8	37
Procedures installation/operation	3.5.10.8, 3.5.10.9.3.1	20, 21
Procedures, test	3.5.10.9.2, 3.5.10.9.3	21
Procurement record page	3.4.2.1	3
Production	3.8	31
Production of changes	3.10.1.5	33
Production of manuscript	3.13.3	36
Production requirements	3.5.11.1, 3.8.6	21, 32
Production of revisions	3.10.4	34

9999906 2100106 592

MIL-M-15071G(NAVY)

	<u>Paragraph</u>	<u>Page</u>
Protective device index	3.5.7.2.1.3	12
Publication numbers	3.10.2, 3.10.3, 3.11.1	33, 34, 35
Publications	3.5.3.6	5
Purchase orders	4.2.1	38
Quality assurance provisions	4	37
Quality assurance tests	3.5.6.5.6	11
Quality program	1.3, 4.2.1, 6.3	1, 38, 42
Quality program (specifics)	4.2.2	39
Quality program acceptance	4.3	40
Quality program requirements	1.3, 3.13, 3.13.2, 4.2	1, 36, 37
Quantity	3.5.3.5, 3.5.9.2.1	5, 17
Quantity and distribution	3.10.2, 3.12, 3.12.1, 3.12.2	33, 35, 36
Radiation	3.6.3.2	23
Rated outputs	3.5.3.4	5
Readiness	3.6.4, 3.6.4.1	24
Recommended test equipment	3.5.3.6	5
Reference data	3.5.3.4, 3.6.2.5, 3.6.7.2	5, 23, 26
Reference designation	3.5.9.2.2, 3.5.9.3.2.1, 3.7.1	17, 18, 30
Reference to paragraphs	3.7.4.4	31
Reference placement	3.7.4.3	30
Reference publications	3.5.10.3, 3.6.2.5	20, 23
References	3.6.7.2, 3.7.4	26, 30
References to zones	3.7.4.6	31
Referencing between diagrams	3.7.4.1	30
Referencing of data	3.3.1	3
Referencing techniques	3.3.1	3
Rejection criteria	3.14	37
Relationship of units	3.5.3.3	5
Relay, lamp indexes	3.5.7.2.1.2	12
Reliability	3.5.6.5.1	10
Repacking	3.5.10.5	20
Repair	3.5.8.3, 6.5.11	17, 43
Replacement pages	3.8.5	32
Replenishment material	3.13.9, 5.1.7, 6.5.12	37, 41, 43
Reproducible copy	1.3, 3.13.6, 3.14, 5.1.5	1, 37, 41
Requirements	3, 3.1, 3.5.6.5.2	2, 10
Responsibility for inspection	4.1	37
Review	6.4.3	42
Review copy	3.11.2.1	35
Review manuscript	3.11.3, 3.13.4, 5.1.4	35, 36, 40
Revisions	1.3, 3.4.1.5, 3.10, 3.10.1, 3.10.2, 3.10.4, 3.11.3, 3.12.2, 6.5.13	1, 3, 32, 33, 34, 35, 36, 43
Revisions, approval	3.11.3	35
Revisions, complete	3.4.1	3
Percentage of	3.10.4	34
Production of	3.10.1.5	33
Responsibility	3.10.1, 3.10.4	33, 34
Supersedure note	3.10.4	34
Updated	3.4.1.5.1	3
Revised pages	3.10.3	34
Safety	3.5.4.3.1, 3.5.6.3	6, 9
Safety precautions	3.5.6.3, 3.5.6.4, 3.6.1, 3.6.3	9, 10, 22, 23
Safety summary	3.6.3.4.2, 3.6.4.1	24
Schedule	3.5.6.5.3	10
Scheduled maintenance	3.5.6, 3.6.1, 3.6.7	9, 22, 26
Scheduled maintenance action index	3.5.6.2, 3.6.7.2	9, 26
Scheduled performance tests	3.5.6.4	10
Scheduled test procedures	3.6.7.3	27
Schematic diagrams	3.5.5.2.5, 3.5.7.2.4	8, 14
Scope	1.1	1
Security classification	3.2, 3.2.1, 3.2.2, 3.10.2	2, 33

9999906 2100107 429

MIL-M-15071G(NAVY)

	<u>Paragraph</u>	<u>Page</u>
Self-addressed post card	3.11.2.4	35
Service test equipment	3.5.11.1, 3.8.6, 6.5.14	21, 32, 43
Servicing procedures	3.6.10.7	29
Set.	6.5.15	43
Shipping, manuals.	5.1.2	40
Signal flow	3.5.5.2.1, 3.5.5.2.2	7, 8
Signal flow diagrams	3.5.7.2.3.1	12
Signals, input/output	3.5.7.2.3.1	12
Simplified mechanical diagrams	3.5.5.2.5	8
Simplified piping diagrams	3.5.5.2.4	8
Simplified schematic diagrams.	3.5.5.2.3	8
Single-functional diagrams	3.5.7.2.8	15
Site information	3.5.10.2	20
Special tools.	3.5.3.5	5
Specific notes	3.7.5.2	31
Specific requirements	3.6.1	22
Standards summary	3.5.10.9.3.2, 3.6.10.11.2	21, 30
Status reports	1.3, 3.13.10	1, 37
Style.	3.7.1	30
Subcontracting	4.2.1	38
Summary list of material	3.5.10.4	20
Summary sheet	3.5.10.9.3.2	21
Supersedure note	3.10.2, 3.10.4	33, 34
Supplement manual	3.4.1.4, 3.4.3.4, 6.5.16	3, 4, 43
Supplier	6.5.17	43
Symbols	3.7.1, 3.8.2	30, 31
System	6.5.18	43
System cable verification check	3.6.10.5	28
System characteristics	3.6.2.5	23
System compartments.	3.6.2.2	22
System component installation procedures	3.6.10.7	29
System control function diagrams	3.6.8	27
System equipment	3.6.2.3	22
System data diagrams	3.6.8	27
System fault directory	3.6.8	27
System fault logic diagram	3.6.8, 3.6.8.3	27
System functional block diagram.	3.5.5.2.2	8
System function directory.	3.6.6.3	25
System illustration, interfaces.	3.5.3.1	5
System manual.	3.6	22
System tests	3.6.10.6	29
System test equipment.	3.6.10.9	29
Tabular listing.	3.5.3.5, 3.5.3.6	5
Table of contents.	3.4.2.1, 3.4.2.1.6, 3.10.3	3, 4, 34
Table headings	3.6.8.1	27
Tables, list of	3.4.2.1, 3.4.2.1.6	3, 4
Technical accuracy	3.14	37
Technical content.	3.4.3, 3.5	4
Technical manuals:		
Commercial	3.4.1.3, 3.4.3.3	3, 4
Final.	6.5.3	42
Manuscript	3.11.3, 3.13, 5.1.4	35, 36, 40
Modified	3.9.2, 4.2.3	32, 40
Multivolume.	5.1.1	40
Supplement	3.4.1.4, 3.4.3.4	3, 4
System	3.6	22
Type I	1.2, 3.5, 3.5.5.1	1, 4, 7
Type II	1.2, 3.5, 3.5.5.2	1, 4, 7
Type IIS	1.2, 3.5, 3.5.5.2	1, 4, 7
Type IIX	1.2, 3.5, 3.5.5.2	1, 4, 7
Type III	1.2, 3.6	1, 22
Technical manuals, shipped	5.1.2	40
Temporary changes.	3.10.2	33
Test data.	3.5.10.9.2, 3.5.10.9.3, 3.6.1	21, 22
Test equipment	3.5.3.5, 3.5.3.6, 3.6.2.5	5, 23
Test operation	3.6.5.2.3	25

■ 9999906 2100108 365 ■

MIL-M-15071G(NAVY)

	<u>Paragraph</u>	<u>Page</u>
Test parameters	3.5.3.6	5
Test procedures	3.5.10.9.2, 3.5.10.9.3, 3.6.7.3, 3.6.10.11.1	21, 27, 30
Test program	3.5.7.2.11.1	15
Tests, active system.	3.6.10.6	29
Tests initial turn-on	3.6.10.10	29
Tests, installation verification.	3.6.10.11	29
Tests, performance.	3.5.6.2, 3.5.6.4	9, 10
Tests, scheduled.	3.5.6.2, 3.5.6.4	9, 10
Text.	3.3, 3.3.1, 3.13.4	2, 3, 36
Text outline.	3.13.1	36
Text page	3.8.3	32
Text references	3.7.4.2	30
Timing circuit diagrams	3.5.7.2.6	15
Title page.	3.4.2.1.1, 3.10.2, 3.10.3	3, 33, 34
Tolerances	3.5.10.9	20
Tools.	3.5.3.5, 3.5.6.3, 3.5.10.4, 3.6.2.5	5, 9, 20, 23
Troubleshooting	3.5.7	11
Troubleshooting chart	3.5.7, 3.5.7.2.1	11, 12
Troubleshooting dependency diagrams	3.5.7.2.1.4, 3.5.7.2.12	12, 15
Troubleshooting diagrams.	3.6.10.11.1	30
Troubleshooting functional dependency diagram	3.5.7.2.12.1	15
Troubleshooting guides.	3.5.7.1	11
Troubleshooting index	3.5.7.2.1.1	12
Troubleshooting maintenance dependency.	3.5.7.2.12.3, 3.6.8.3	16, 27
Troubleshooting procedures.	3.5.7.2.2	12
Troubleshooting references.	3.5.6.4	10
Turn-on procedures.	3.5.7.2.1.4	12
Turn-on tests	3.6.10.8	29
Type I manuals.	1.2, 3.5, 3.5.5.1	1, 4, 7
Type II manuals	1.2, 3.5, 3.5.5.2	1, 4, 7
Type IIS manuals.	1.2, 3.5, 3.5.5.2	1, 4, 7
Type IIX manuals.	1.2, 3.5, 3.5.5.2	1, 4, 7
Type III manuals.	1.2, 3.6	1, 22
Typography.	3.8.1, 3.8.6.1	31, 32
Unit.	6.5.19	43
Unpacking	3.5.10.5	20
Updated revision.	3.4.1.5.1	3
User activity comment sheet	3.4.6	4
Utilities list.	3.6.10.1	28
Validation.	3.14, 6.5.20	37, 43
Verification.	6.5.21	43
Verification test	3.5.10.9.3, 3.6.10.8, 3.6.10.11	21, 29
Volumes	3.7.2	30
Warnings.	3.5.4.3.1	6
Watch condition	3.6.4.1.1	24
Wave forms.	3.5.5.2.1	7
Weight and volume	3.5.3.5	5
Workmanship	3.14	37
Zones	3.7.4.6	31
Zoning on diagrams.	3.7.4.5	31